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# MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY.

EDITED BY

G. E. MOORE,

WITH THE CO-OPERATION OF PROFESSOR PRINGLE-PATTISON, PROFESSOR C. D. BROAD, AND F. C. BARTLETT, M.A.

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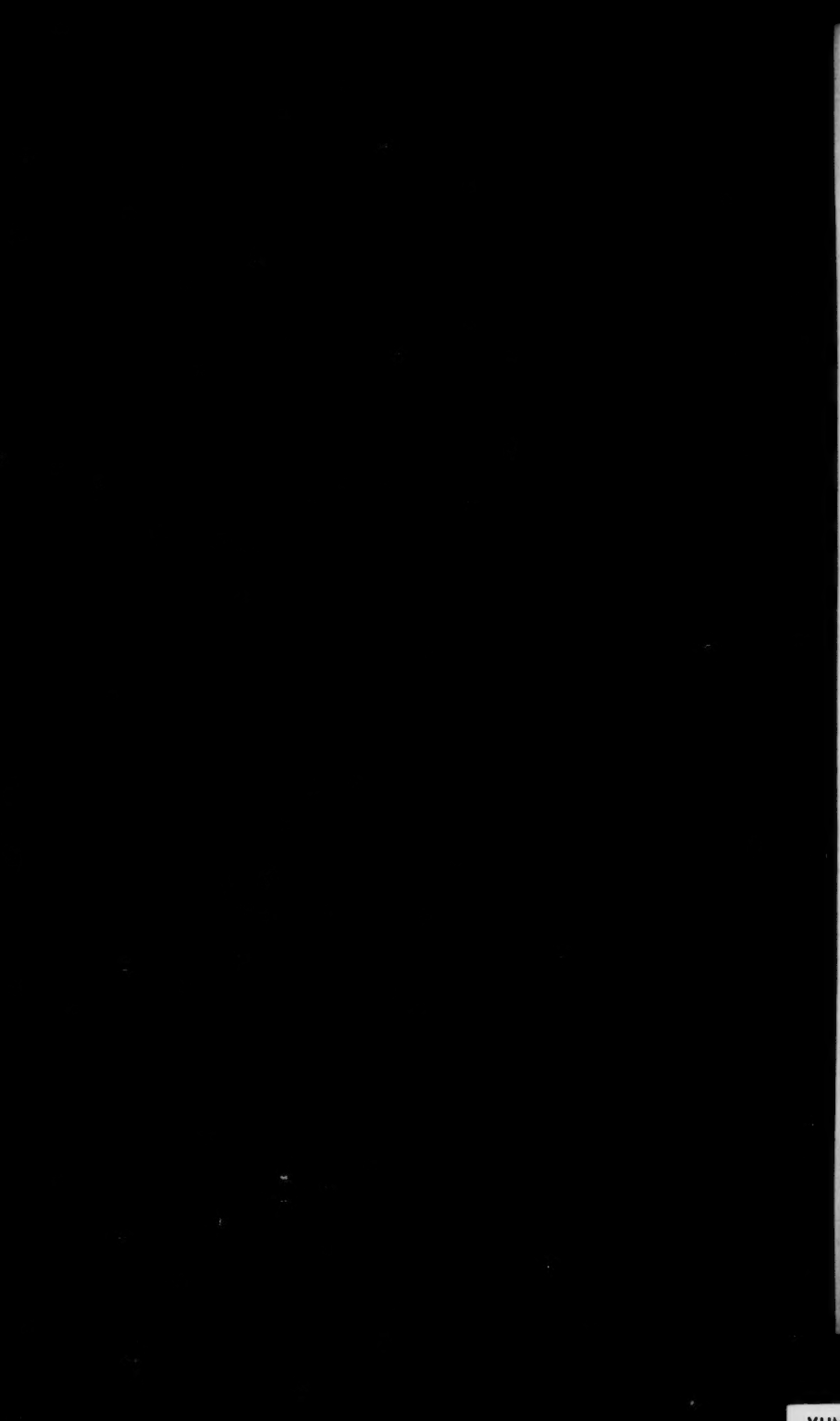
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# MIND

## A QUARTERLY REVIEW

OF

## PSYCHOLOGY AND PHILOSOPHY



### I.—SPACE AND TIME: AN ESSAY IN THE FOUNDATIONS OF PHYSICS (I.).

BY JAROSLAV ČÍSAŘ.

#### PREFATORY NOTE.<sup>1</sup>

MR. ČÍSAŘ'S thesis for his doctorate at the University of Prague is written in the Czech language. He submitted to me the first draft of a free translation to obtain my opinion as to whether the line of thought, at which he had arrived independently, was sufficiently distinct from that which he had subsequently discovered in my *Concept of Nature*, to warrant its publication in English. I am decidedly of opinion that this is the case: in many respects our views are divergent, and where they agree Mr. Čísař has emphasised considerations different from those on which I have founded my own arguments. But, apart from the minor consideration of its relation to my own work, the essay contains novel ideas which ought to be taken account of.

A. N. WHITEHEAD.

1st August, 1923.

<sup>1</sup>Note by the author: The present essay is a somewhat condensed version of a work which I recently presented as thesis for my doctorate of Natural Science at the University of Prague. When I put on paper the substance of it two years ago, and came across Professor Whitehead's admirable book, I was in serious doubt whether I was not merely retracing a path which the author of the *Enquiry* and *Concept of Nature* had traversed in a much better way; but Professor Whitehead himself dispelled my doubts and encouraged me to pursue my line of thought. I cannot sufficiently acknowledge my deep gratitude and heavy indebtedness to him for the kind interest he has taken in my work, for the inspiration which I derived from my discussions with him, and for the encouragement he has so generously given me; without which this essay would have never been finished.

JAROSLAV ČÍSAŘ.

## INTRODUCTION.

1. The basis of the physical explanation of phenomena consists in a description of the phenomena in terms of relations and of the entities subordinate to these relations. The aim of physics is to furnish the simplest explanation possible, *i.e.*, a description employing the minimum number of entities and relations; its ideal is thus to achieve an explanation which would describe all phenomena by means of a single entity and a single relation.

Every explanation must begin with a certain number of undefined conceptions, of which it is assumed that they are generally intelligible, and that they convey the same meaning to everyone. The concept of relation itself is the first of these undefined conceptions, and so is the concept of the related entity—relatum—which is thus presupposed at the same time as the subject of the relation; both concepts are of a purely logical character.

2. Physics, as ordinarily expounded, begins by postulating two fundamental relations, *space* and *time*, which it leaves undefined, assuming their general and unique intelligibility, and to which it endeavours to reduce all other relations. At the same time with them it assumes the existence of an entity which is the subject of spatio-temporal relationships, *i.e.*, *matter*, which, after *space* and *time* have been assumed, can be defined by its fundamental property of impenetrability and the inability of the same particle of matter to be in two places at the same time.

The relations of *space* and *time*, which are thus made the basis of physics, are the result of a long and complicated process of abstraction, the beginnings of which are to be found somewhere in the dawn of animal intelligence; the current conception of them, however, is very far removed from that ideal simplicity and unique intelligibility which is assumed of them by physics, and which at a first glance seems to be their characteristic; this is attested by the fact that there is no consensus of opinion even as regards their assignment into the category of relations. All who have concerned themselves with the study of the foundations of physics, are aware what irreconcilable divergencies of opinion there exist concerning these two concepts, and in what a logical circle move the majority of the attempts at their definition. The definition of *space* and *time* as "pure extension" forms an example of such a hidden circle: the definition is devoid of meaning, if by the word "extension" we do not imply "space-ness and time-ness" which implication, however, renders our definition valueless.

3. It is obvious that such a lack of uniformity in its fundamental concepts cannot be very beneficial to a science; to what confusion it can lead is known to every reader of the popular and semi-popular expositions to which Einstein's theory gave rise. Space and time begin to warp, to stretch, to shrink, and to pass through all possible deformations, without any knowledge on the part of the writer or reader what a deformation of space and time means or can mean.<sup>1</sup>

The present study is an attempt to arrive at a logically satisfactory definition of space and time which would also satisfy the requirements of physics. To accept space and time as undefined fundamental concepts of physics is not possible, owing to the previously mentioned lack of agreement as to their meaning; it is therefore necessary to derive them from some more fundamental and undefined concepts, as to the meaning of which there exists no such divergency of opinions.

4. The majority of definitions which have undertaken this task are very unsatisfactory; some, because they are logically defective, like the one mentioned above, others, because they yield nothing to our knowledge of physics, and hence are useless for its purpose. The answers given to the problem of defining space and time by the philosophers are mostly inadequate because, instead of a definition applicable to physics, they attempt to ascertain the *metaphysical* status of these two concepts; so, *e.g.*, Kant's famous attempt.

The present study is based upon the point of view that all ontological or metaphysical speculations are entirely and completely irrelevant to physics; physics produces its laws irrespective of whether the entities described by them are realities existing outside the mind, or merely its products. The truth of a given law of gravitation remains unaffected, whether we presuppose that the bodies subject to it are *real* things, existing even when we do not exist, or that they are an illusion of our mind.

5. Physical science is conditioned by perception; in perception it has its roots, percepts form its material, which it arranges, analyses and "explains" by reducing them to the smallest attainable number of elementary (*i.e.*, further irreducible) percepts and relations.

The conception of percept is here to be understood in a

<sup>1</sup>Space and time are even said to be discontinuous! Some authors (among them Poincaré) admit the possibility of "atoms of time" as a result of the Quantum theory (even a book written with such rare lucidity and common sense as Eddington's *Space, Time and Gravitation*, is not flawless in this respect).

somewhat broader meaning than that of mere sense-data simplified and schematised by a process of apprehending; percept in our use of the term must comprise also hypothetical entities, such as atoms, electrons, ether waves, etc., as long as by these names we understand genuine objects of possible sense-experience, unapprehended directly because of the imperfection of our senses, but inferable from sense-experience as a whole, and not physical fictions, serving as useful pseudo-perceptual symbols of certain mathematical expressions of natural processes. We must, of course, not forget that the idea of perception, even as currently understood, is very complex, and represents the result of a complicated activity of simplification, generalisation, intention, imagination, etc., to which it is subjected before it emerges from the rough and formless sense-data, in which it "enters" consciousness; these details, however, belong to the domain of psychology and logic, and although important also for the present study, they are not essential to it, and would lead too far, if we were to occupy ourselves with them.

6. Perception presupposes the existence of a percipient, of a mind; the necessity of distinguishing the perceptual contents of the mind from its unperceptual contents then leads to the postulate of a greater number of percipients—of minds—and thus to the pre-supposition of the so-called "external world": the denial of this external world leads to a denial also of plurality of minds—solipsism, which philosophy endeavours to avoid for reasons mainly ethical, and which physics cannot accept if it does not wish to deprive itself of the most useful criterion of perceptuality.

Speculations concerning the ontology of the external world, its mode of existence, or the manner in which it can act upon the mind, are metaphysical speculations, entirely irrelevant to physics. Some of them are of vital importance to ethics, none of them are of vital importance to physics; the latter, as we remarked above, measures and arranges its material—percepts—irrespective of whether they are the result of the action of some real existence "in itself," or the mere product of a mind which supposes that it apprehends.

These speculations, I conjecture, do not condition even the possibility of philosophy of the physical science, the aim of which is to determine the fundamental concepts of physics and the field of its jurisdiction; from ontological speculations physics does not need to take over any but those conclusions upon which all metaphysical systems are agreed, with the exception of absolute scepticism, which

cannot logically be refuted, but which must be rejected on account of its absolute sterility. Roughly speaking, these assumptions are two in number: (1) there exist a plurality of percipients—minds capable of knowing; (2) there exists something which is not perceiving mind—the object of knowledge.

7. To these assumptions every philosophy of science which desires to have any social value—to be valid for more than a single mind—must add a postulate, which in the existence of what is not mind (the object of knowledge) demands the existence of something which as a characteristic of the object of knowledge is common to all minds, whether as a characteristic directly perceived, or inferred. By *the external world*, or briefly by *the World*, we understand this characteristic of the object of knowledge, which (at least potentially) is the common property of all minds, and on the identity of which they all agree.

7.1. The agreement of the characteristics of the object of cognition, postulated by this definition of the external world, implies the independence of the external world from the individual percipient, and accordingly the *invariance of the external world with respect to a given type of mind* (if by this type of mind we mean one subject to similar laws of thought), but not the independence of the external world from mind in general. Various constituted minds will, in all probability, construct various "external worlds". A world independent of mind in general would be a world common to all possible types of mind; but as minds constructed diversely from ours are not only unknown to us, but even impossible for us to imagine in respect of all possibilities of their type, such an absolute external world is not only unknowable, but a concept devoid of content.

7.2. It is clear then that neither the name of "external world," nor its definition, conceals any supposition as to the mode of existence of the object of cognition; even if I presuppose (and this is a matter of indifference for physics) that only percepts can be an object of immediate knowledge, that therefore the mind can know only its own states, it is a matter of indifference whether I conjecture that these states are the mind's own creations, or that they are caused by some external entity, existing outside the mind and independent of it. Physics, as we have already said above, is concerned only with percepts, and not with the manner in which they enter the mind, or arise within the mind; and the view to which we give the preference in this matter is a matter of personal predilection; as far as physics is

concerned, our choice will remain without consequences. If it better satisfies our metaphysical preconceptions and habits, or preferences, we shall not commit any error if by the external world we understand some common *source* of percepts, the action of which on cognately constituted minds gives rise to analogous states within these minds; that these states are analogous is inferred by each of the given minds from contact with others. Such a view of the external world as a source and cause of percepts, I think, actually predominates with the majority of physicists, perhaps *implicitly* with the majority of them; from the point of view of physics it cannot be erroneous, while from the point of view of natural philosophy it means a certain facilitation of the processes of thought by fixing a symbol for a comparatively concrete concept. It must, however, be clearly remembered that from the point of view of physics we are making no new assumption, but that we only replace the postulate of the correspondence between the contents and relations of two minds (which must exist in *both* minds, if it is to be a correspondence) by the postulate that a certain part of these minds is common to both; whether "within them" or "beyond them" is a question of metaphysics, with no bearing upon physics at all.

#### THE CONCEPTS OF EXTENSION AND ORDER.

8. From what we have said so far, it is clear that it is necessary to consider the space and time of physics as real to the same extent as that to which we consider as real the perceptual content of our minds, or the "external world" of physics, as defined in previous paragraphs. This means that we are not in the least concerned with their *transcendental* reality. Physics knows only perceptions, and physical space and time must therefore be something within these perceptions: if we did not exist, space and time could, but, as far as physics is concerned, need not, exist.

According to the theory held in the present essay, space and time are an abstraction from the perceptual content of the mind, an abstraction resting upon the fundamental logical concept of *order*. The concept of order presupposes the existence of entities among which it can exist as a relation; and that again assumes the existence of another relation, which is usually called the relation of externality, and for which—to avoid the too spatial implication of the word externality—in what follows we shall employ the term 'exclusiveness'. The totality of entities which lend themselves

to a given type of order, form a *collection*, or an *aggregate*; and if the order of a given aggregate is to be unambiguous, the members of this aggregate must be uniquely determined, and must be mutually exclusive: they must be what we shall later denote by the term *elements* of the aggregate. Externality and 'elementarity' are only different consequences of the same relation, which we denote by the term *extension*, and which thus together with the relation of order, will constitute the basis of our definition of space and time.

To formulate this definition, to find *what* in our perceptions constitutes space and time, we shall have to undertake an analysis of the perceptual datum; and for this purpose we must collect and define a number of concepts which will serve us as the tools and foundations of our analysis. As we wish to eliminate the danger of a possible logical circle in our definition, we must be on the alert to prevent any specially spatio-temporal concepts from creeping surreptitiously into our definition of space and time through the material on which this definition is to be based; consequently great stress will be laid upon the purely formal, non-perceptual character of our basic materials; hence also the purely logical, formal character of this section.

*Extension*.—9. The first fundamental and undefinable, although generally and unambiguously intelligible relation, which we shall place at the basis of our investigation, is *the relation of whole to part*, which we shall briefly denote as the relation of *inclusiveness*. This relation is purely formal: although it holds good as a special case in the world of our perceptions, it can be also predicated of non-perceptual, purely conceptual entities: of numbers, speech, sensations, etc.; it therefore does not of itself contain anything spatial or temporal.

*Extension* we shall define as the *possibility of inclusiveness*: a given entity will be said to possess extension, to be extended, if taken by itself it admits of the relation of inclusiveness, *i.e.*, if it is divisible into parts. The relation of extension is implied in the relation of inclusiveness, and is therefore as purely formal a concept as the latter; but although, being void of all spatial and temporal content, it possesses the characteristics necessary for the purposes of our definition, it is not adequate to define space and time. To say, for instance, that space is pure extension, would be equal to maintaining that any extended pure concept, *e.g.*, human speech, has spatial relations; the fact that all extended entities admit of spatial representation is not, as we can readily see, a proof of the spatiality of extension: the

spatiality which appears in such representation, is not an attribute of extension, but of the symbols employed.

10. The term *entity* we have so far employed to denote any *existens* which is not contrary to the laws of thought, but without any further limitation; it can be of a physical as well as only an abstract, purely conceptual nature. In what follows we shall be concerned mainly with entities which admit of division into parts; and the term *entity* we shall henceforward use to denote any *existens*, whether physical or purely conceptual, possessing extension. This means that, of classes of pure concepts, only those will be termed entities, which it is possible to define as collections, and not solely by intension.

11. If we exclude the case where an entity A can be its own part ("part" therefore meaning "*proper* part") there exist, as is shown in every text-book of logic, four possibilities of extensional relation of entity A to entity B:

- (a) a part of A is B (B is a part of A); or
- (b) *vice versa*; or
- (c) a part of A is also a part of B, in which case the reverse is also true; or
- (d) there exists no part of A which is also a part of B, and *vice versa*.

The first case is only the reverse of the second, but the relation is the same, and we have already applied to it the name *inclusiveness*; the relation described by the third case we shall call *intersection*, and that indicated by the fourth we shall denote as *exclusiveness*. Inclusiveness, exclusiveness, and intersection, are three different aspects of the purely formal relation of extension, and are therefore equally free of all spatial and temporal content.

12. Every entity is defined by a number of attributes, by the totality of which it is distinguished from all entities not identical with it. These attributes can be divided into two classes: those attributes which are common to all parts of a given entity, and by virtue of which (with respect to which) this entity has extension; and attributes, which are not common to all parts of a given entity and which, in so far as the extension of the entity is concerned, can be neglected. The totality of the attributes of the first class in a given entity we shall call its *extensional characteristic*. It follows from our definition that in every entity it will be possible to find either parts which still are entities (have extension) with respect to the extensional characteristic of the original entity, and also parts which are without extension with respect to this characteristic, or only the latter; these latter



we shall call elementary parts, or briefly *elements* of the given entity. Thus, for instance, the entity "the family of Mr. X," consists of entities: "the parents X," "the children X," etc.; and of the elements: Mr. AX., Mrs. MX., their son FX, their daughter BX, etc.; the entity "colour" will have parts which in their turn are entities, for instance the colour of sodium light, but also parts which have no extension with respect to the general characteristic which makes colour an extended entity—therefore elementary parts—*e.g.*, the colour  $\text{Na}_1$ .

It is therefore possible to consider every entity as an aggregate of entities, which are its parts, or an aggregate of elements, which, although its parts, are no longer entities with respect to its extensional characteristic.

12.1. A given entity can have a limited or an unlimited number of elements, and will thus be either a finite or an infinite collection. In the first case it is easy to find all of its elements by means of the relation of inclusiveness (applied repeatedly as a relation of *part of a part* until a part is reached which does not admit of a further application of this relation); in the case of infinite aggregates the task is a more complicated one, and we shall later—in a concrete perceptual case—attempt to find a different method.

*Co-intersection, dissection and complementary parts.*—13. In what follows we shall find it useful to have at our disposal a few concepts based on the relation of extension. In the first place we shall use the term *co-intersection of  $n$  mutually intersecting entities* to denote the entity which is the aggregate of all parts which all the  $n$  entities in question have in common. Again, if in a given entity  $R$  we can find two non-intersecting entities  $A$  and  $B$  such that no part of  $R$  can be found which is not either a part of  $A$  or a part of  $B$ , or wholly composed of two parts, one of which is a part of  $A$  and one a part of  $B$ , we say that we have *dissected*  $R$  into  $A$  and  $B$ ;  $A$  and  $B$  are called *complementary parts* of  $R$ , and each is called the other's *complement* in  $R$  (written:  $B$  is co- $A$ , and  $A$  is co- $B$ ).

*Order.*—14. The second relation which we shall place in the foundations of our logical analysis, is the relation of order. The concept of order is based upon the properties of a relation expressed by the words "*before and after*" or "*between*". Between these two relations there is a close logical connection: If  $A$  is *before* (or *after*)  $B$ , and  $B$  is *before* (or *after*)  $C$ , then  $B$  is *between*  $A$  and  $C$ . From this, and the transitivity of the relation "*before and after*," and from the other properties of the relation "*between*," as they are usually given

in works on the foundations of mathematics, the whole theory of order can be developed. The exact logical formulation of the properties of these order-relations offers considerable difficulties with which we shall not concern ourselves here, referring the reader to standard works on the matter; in these works we can also satisfy ourselves that the order-relations can be defined without any reference to space and time, and are intrinsically independent of these concepts; the concept of order is therefore purely formal and its use in the definition of space and time cannot involve us in a vicious circle.

14.1. We say that a given aggregate of any elements (or mutually exclusive parts) is *ordered*, if of any two of its elements we can say that one is before the other, or, what is the same thing, that one is after the other; or if of any three elements of the aggregate we can say that one is between the other two. A given aggregate of elements is said to be *properly ordered*, when the case "X is between A and B" excludes the cases "B is between X and A" and "A is between X and B"; that is, if we say that A is before B, we cannot also say that B is before A.

*Boundary.*—15. With the aid of the concept of dissection it is possible to define the concept of boundary, which is of the greatest importance in the theory of ordered aggregates; the concept is one of the most difficult to define in a purely formal way, and, as in the case of order, for its exact definition we shall refer the reader to standard works on the foundations of mathematics. We shall here content ourselves with an incomplete definition which we think sufficient for our purpose, and define the *boundary of the entity R in the entity X* (of which R is a part), as that characteristic of R, which R has in common with co-R, and by virtue of which R is also distinct from co-R.

The definition is sufficient to enable us to see that the boundaries of two entities can intersect (that two entities can have a part of their boundary in common). Of two non-intersecting entities, which have a part of their boundary in common, we shall say that they are *joined*; two non-intersecting entities which are not joined we shall call *separate*. Further, we shall say that an entity R is *enclosed* in the entity X, if every part of R is a part of X, and if for every part of R (say *r*) there can be found two parts of co-R, (say *a* and *b*) such that *r* is between *a* and *b*. It can be readily seen that if R is an entity enclosed in X, the whole of its boundary will be a part of the boundary of co-R, the rest of the boundary of which will be defined when the

boundary of X (being considered a part of a larger entity) is defined; but in practice, as a rule, the boundary of X (which may have no boundary) does not concern us, and all we need is the boundary of some enclosed part of it.

*Connectedness and Continuity.*—16. This takes us directly to the very important concept of continuity, which the concept of boundary enables us to define. We shall say that an entity is *connected*, if any and every one of its possible dissections gives us two joined entities; then by the *continuity* of a given entity we understand the fact that every one of its possible divisions (*division* meaning repeated dissection) gives us an aggregate of entities such that no matter which member or collection of members obtained by the division be taken (save the collection which is the complete entity), such member or collection will always be joined to at least one other member of the aggregate. From this it follows that given any two separate, connected parts of a continuous aggregate X, say A and B, it is always possible to find another connected part of X, say C, which will form a connected entity with A and B (is either joined to both or intersects both). A continuous aggregate of elements is called a *continuum*.

*Ordinal Characteristic.*—17. In an earlier paragraph we found that a given entity possessed extension by virtue of a certain class of attributes, which we denoted by the term extensional characteristic; similarly in the case of ordered aggregates we must assume the existence of something with respect to which the aggregate is ordered—by virtue of which the elements of the aggregate are arranged in one particular way and in no other. Without making any assumption as to the nature of this something, which we may, analogously to the extensional case, call the *ordinal characteristic* (or the *ordering relation*), we can readily see that this characteristic must in a certain way be the same for all elements of the aggregate, and in a certain way different for every one of the elements: the sameness of the characteristic for a given aggregate will depend upon the nature of this aggregate; the difference for the various elements will be either a result of convention, of a rule which we arbitrarily set up for the case in question, or—as is the case when the aggregate is given us already ordered—a result of comparison of the various elements, and consequent determination of the characteristic in which they all differ. Usually the comparison consists in measuring the amount of a certain quality possessed by the various elements; and we say that the various elements differ as to the “*degree*” or

"intensity" of the ordinal characteristic, and are ordered according to the variation of that intensity.

17.1. It is very difficult to state more than this about the ordinal characteristic without a loss of generality; the definition of the characteristic in each special case will, as we said before, depend upon the nature of the aggregate in question, and the determination of the manner of variation of this characteristic will be a matter of practical physics, of practical possibilities and necessities, which will give rise to a certain method of 'measurement'. One suggestion which offers itself at this point arises from the fact of the sameness of the ordinal characteristic for all elements of the aggregate: in this respect the ordinal characteristic invites comparison with the extensional one, and it is suggested, that if the two are not identical in all cases, it should be possible for them to be the same at least in some cases. An investigation of the relation of the ordinal to the extensional characteristic offers an interesting field of research, into which it is, however, not our intention to enter in the present essay.

17.2. Neither shall we make it a part of our present task to study the equally interesting and more important problem of *measurement*, which is concerned with quantitative determinations of the variation of the ordinal characteristic; it will here suffice if we say that the possibility of measurement of a given continuous aggregate is dependent upon the existence of a certain relation between every two elements of the continuum, which relation it is possible to express numerically, and to compare as to equality or inequality between various pairs of elements; this relation we denote by the term "*interval*," and spatial "distance" is a particular case of it.

*Dimensionality*.—18. The ordinal characteristic of a given aggregate may be simple or complex, as its variation between two arbitrary elements of the aggregate can be determined by a single comparison or by a number of comparisons mutually independent; thus, two colours may be compared as to their wave lengths and as to their intensity (energy), and no amount of measurement of the one will give us any idea of the magnitude of the other. The number of such mutually independent comparisons necessary to determine the relation between two arbitrary elements in the continuum is called the *dimensionality* of the aggregate: thus, where one determination is sufficient, the aggregate is said to be one-dimensional, where two are necessary, two-dimensional, three, three-dimensional, etc.

*Co-ordinates*.—19. An important consideration which offers

itself to us in this respect is the fact that the elements of one  $n$ -dimensional continuum can be brought into a unique one-to-one correspondence with the elements of any other  $n$ -dimensional continuum; in particular, a one-dimensional continuum can be so correlated with the series of real numbers, an  $n$ -dimensional continuum with an  $n$ -dimensional series of numbers. Such correlation, the assignment to each element of the given continuum of an element of a corresponding number-series (containing  $n$  real numbers in an  $n$ -dimensional series) we call the introduction of co-ordinates, and the numbers thus assigned the *co-ordinates* of the respective elements. It follows from the properties of the number-continuum that there is an infinite number of possible correlations of a given continuum to its number-series: it is the task of the theory of measurement to indicate a method by which, once a certain finite number of elements is assigned its co-ordinates, the co-ordinates of any other element can be determined uniquely. But even before this method is known, co-ordinates serve a certain purpose, namely as mere names of the elements to which they are assigned: they are purely descriptive.

With this preliminary equipment we can embark upon our main task of analysing our perceptions and extracting from them that something which we so unconcernedly call space and time.

#### ANALYSIS OF PERCEPTION.

20. The thirst of the mind for knowledge of something outside itself must be regarded as a disposition inherent in the nature of mind. The way in which mind comes into contact with the object of its knowledge is a mystery which neither physics nor philosophy will probably ever solve. If we accept the postulate of the existence of the external world as something which is common to all minds, but independent of each individual one, then perceptions are the result of contact between the mind and this external world, and the bodily senses, themselves parts of the external world, enlarged both in the scope and the precision of their powers by physical instruments, are the media through which the contact is effected.

In perception the external world is presented to the mind as a phenomenon, a something of which the first quality distinguishable by the mind is variety, manifoldness, or, in other words, divisibility into parts. Consciousness of this manifoldness results from the recognition that in perception, as it is found in the mind, there is more than the mind is

immediately aware of; and it arises, we may suppose, from the limitation of the mind, from its inability to comprehend *totality*, to seize the whole of being as such, in its entirety. Thus, in consequence of our definition of extension (par. 9), we may say that nature, the external world, possesses for the mind, *extension*; whether we say that this extension is *discovered in nature*, or *imposed upon nature* by the mind, will depend upon our philosophic views or preconceptions.

From the effort of the mind to apprehend something outside itself we must infer that the awareness of something which is not mind, the awareness, that is, that the mind itself is not the whole of reality, but only a part of it, constitutes a fundamental characteristic of its being; it is in this internal evidence that we have to look for proof that it is not commensurate with the universe, which fact will then account for its inability to comprehend the totality of being as a single whole (if we are justified in supposing that, in order to comprehend the whole universe at once, the mind would have to be commensurate with it), and for the necessity of dividing this totality into fractions which it can comprehend.

21. Since we discover extension in the whole of our perceptual data, it follows that of parts of the world as such we can predicate everything which we can predicate of an entity having extension, *i.e.*, inclusiveness, exclusiveness, and intersection of its various parts, and that we can postulate in them the existence of elementary parts, *i.e.*, parts which have no extension as regards any attribute by virtue of which they are parts of our perceptual data. A satisfactory definition of such an elementary part will be attempted in a later paragraph.

The relations which are deducible from the fundamental relation of extension do not, however, exhaust the logical relations which the mind discovers in (or imports into) the totality of its perceptions. Of the parts of our perceptual data which can be called separate, it is hardly possible, on the basis of the relation of extension, to say more than that they have no common part; but for that very reason we cannot usefully apply this relation to the elements of our experience, to relations of which we endeavour to reduce phenomena. The problem is made easier by the fact that the mind discovers in (or imports into) its perceptual data a second fundamental relation, namely that of *order*, *i.e.*, we can arrange individual parts or components of our perceptual data in series according to many different characteristics of given perceptions.

22. For reasons of convenience, we will give a name to the aggregate of perceptions of a given mind calling it the *Experience*<sup>1</sup> belonging to this mind, or, in short, the *Experience of a given mind*. Any part of its perceptual data which the mind is able to *distinguish* in its Experience, we will call an *event*. When we thus distinguish an individual part, or event, in a given experience, we have, in the first instance, to determine its boundary, as we defined that term in the foregoing chapter; so that we can define an *event* as *a delimited part of the perceptual data of a given mind*, and *Experience* as *the aggregate of events which the mind distinguishes, or delimits, in its perceptual data*. An elementary part of a given perceptual datum we call an *element of experience*.

Having recourse to the formula used above, we can define an *element of experience* as a part of Experience which has no extension as regards any attribute, by virtue of which it is a part of Experience; this definition is, however, unsatisfactory in so far as these attributes are not clearly defined, and we must therefore replace it by a better one.

23. If we define a *spherical event*<sup>2</sup> as a connected event, the co-intersection of which with any other spherical event which it intersects is itself a spherical event, we can define an *element of experience* as *the co-intersection of a class of spherical events which have a common co-intersection, and which comprise every spherical event having a common co-intersection with all the members of this class*.

23.1. We arrive at this definition in the following way:— Ideally we can regard every event as part of another event, and *vice versa* we can regard every event as composed of other events which are its parts. The ideal delimitation of an event depends on nothing in the events themselves, on no particular characteristic of Experience, but may be arbitrarily determined by the cognitive mind. From this it is evident that a given event or a given section of Experience can be divided ideally an infinite number of times, and that every section of Experience will contain an infinite number of (possible) spherical events, which will have an infinite number

<sup>1</sup> I use the term *Experience* (with a capital) as the best substitute I can find in English for the Czech word "*dění*" which I used when I conceived the work in my own language. The word "*dění*" conveys much better my meaning, its English equivalent being "the something that is going on". "*Experience*" shares with it the advantage of being very non-committal as to any particular view of its mode of existence.

<sup>2</sup> The term "spherical" here does not imply the geometrical properties of a curved surface: a cube, for instance, in so far as it is an event, is a spherical event.



of mutual co-intersections; and these, by our definition of spherical event, will themselves be spherical events. If we take a co-intersection of any number of mutually intersecting spherical events, we can always find a spherical event, the co-intersection of which with these original events will be a *part* of the original co-intersection; and by increasing the number of such spherical events we can obtain as small a co-intersection as we please of a finite aggregate of spherical events. If we include in this aggregate every spherical event which has a common co-intersection with all the members of the aggregate, we *tend* to an ultimate element which is the co-intersection of the infinite class, an element which will not be further divisible into parts and which will not intersect any element other than itself; in other words, an element of experience.<sup>1</sup>

23.2. That an element of experience has not parts can be proved as follows: Let us suppose that an element of experience R has parts A and B; then it is possible to find a spherical event X which does not contain the whole of R, but only one of its parts. Since a co-intersection of *n* spherical events is, by definition, contained in each one of these events, the event X is not a member of the class of events, the co-intersection of which is the element of experience R; but since an element is a co-intersection common to *all* spherical events which mutually intersect, such an event X cannot exist; therefore the element R cannot have parts.

24. As the number of events comprising a given element of experience is infinite, an infinite number of determinations would be required to identify a given element. Now that is

<sup>1</sup> Prof. Whitehead, who very kindly discussed with me a considerable part of the present work, on the basis of this definition proposed an alternative definition of an element of experience which, while accepting mine, made room for his view that there can be classes of events which, though they stand to one another in the relation of inclusiveness and so of intersection have no co-intersection common to all; his proposal is as follows: "An element of experience is a class of spherical events such that

- (1) each of its finite sub-classes has a co-intersection;
- (2) every spherical event, which has a co-intersection with each finite sub-class of a given class, itself belongs to this class."

As will be seen, this definition agrees with mine except that Prof. Whitehead calls an element of experience a class of events which have a given co-intersection, whereas I call an element this co-intersection itself. Both definitions have their advantages and disadvantages; I prefer my original definition, because it agrees with our current view of a point, and because it has its justification in perception, in that it leads us direct to the perceptual limit of the compass which we usually understand by the conception of point.



impossible in perception; in perception, therefore, we substitute in place of an element of experience a very small event representing the *perceptual limit* of our sense faculties, and comprising the given element together with a number of elements which cannot be distinguished from it in perception; to determine such a perceptual element of experience a finite number of relations between this element and the other elements is sufficient. The sum of the relations of a given element to the remaining elements we call its *position* in a given Experience, and the sum of those relations which suffice for its approximate determination, in the way indicated above, its *approximate position*.

24.1. It may be, indeed, and it most probably is so, that, even apart from the imperfection of our senses, the mind is more limited in perception than in thought, and that there is inherent in Experience itself a certain characteristic, which uniquely divides Experience, or a given section of it, into a *finite* number of delimited events, which the mind can further divide in thought but not in perception. Since such a characteristic must needs be independent of the mind we cannot predict it *a priori*, and its existence or non-existence can only be proved empirically; this characteristic—without making for the present any assumption as to its existence or non-existence—we call the *atomicity* of Experience.

From the manner in which we arrived at elements of experience it is evident that these elements will form a continuum; this continuum will, however, only be conceptual and thus does not preclude the possible perceptual atomicity of Experience. Even if it were ascertained by exact perceptual analysis that Experience is atomic, it will nevertheless suit us better, from the point of view of facilitating mathematical analysis, to regard it as continuous, with the understanding, of course, that results based on this hypothesis are only approximately valid, like statistical averages within aggregates of great numbers of elements, the individual significance of which in relation to the whole is infinitesimally small.

25. The parts of perceptual and non-perceptual content of a given mind present a number of attributes which can be arranged in series and enable us to order these parts; such ordinal characteristics are, for example, pleasurable, colour, sound, intensity, and so on. We facilitate the ordering of the parts of the mind's content according to this or that characteristic by correlating the various "degrees" of the attribute with the series (or part of a series) of natural numbers, which is nothing but an ultimate abstraction from

an ordered aggregate, of which the elements have become disembodied into mere concepts of position in a series, devoid of all perceptual content.

A given attribute is "simple" (or one-dimensional) if all its degrees can be uniquely determined by their correlation with members of a single series of natural numbers, "complex" (or  $n$ -dimensional) if members of more than one (that is  $n$ ) series of natural numbers are required for the unique determination of an element which possesses this attribute; a one-dimensional relation gives rise to a one-dimensional aggregate or continuum (according as it comprises a finite or an infinite and continuous number of degrees) and an  $n$ -dimensional relation similarly to an  $n$ -dimensional aggregate or continuum.

26. If, within the world of our perceptions, we try to order parts of our perceptual data under any ordinal characteristic arbitrarily chosen from among those which we immediately apprehend, we find that we can order (that is, correlate with one or more series of natural numbers) under this characteristic a determinate part of the totality of events into which the mind divides its Experience; but we can as a general rule expect that in a given Experience we shall always be able to find events which remain outside the ordering, that is, outside the system of co-ordinates which we have chosen. The requirement of simplicity and uniformity, upon which a satisfactory physical description of a phenomenon is based, would be disregarded to a considerable extent, if we arbitrarily took as the basis of our description any one of the characteristics immediately apprehended: instead of one, uniform description we should obtain a whole series of descriptions, each one of which would only describe the Experience partially; and we should never know how much of the Experience still remained to be described, since we could not be certain that we should not eventually succeed in discovering events distinguished by an attribute which could not be reduced to the one we had selected. In order to satisfy that requirement we must find an ordering relation—an ordinal characteristic—which could be predicated as existing between *any and all* parts of Experience, and which could therefore serve as an ordering principle for *all* events. The discovery of such a relation will be attempted in the following section; meanwhile we will postulate its existence in Experience and call it a *formative relation*. A formative relation is thus an ordering principle which can subsist between any and all parts of Experience whatever; the "*Form*" of a given aggregate of events will then be the sum of relations of which

the existence can be predicated between all parts of this aggregate without exception.

26.1. The conception of the Form of an Experience is without meaning unless we determine the kind of events into which we divide this Experience, as a given Experience can be divided into events in an infinite number of ways; among these ways, however, there exists only one division which is uniquely determined for every Experience, and that is the division into elements of experience. We may therefore define *the Form of an Experience* as the sum of formative relations existing between the elements of this Experience.

26.2. In this connexion we must recur to the result we reached in our consideration of an ordering relation towards the end of the preceding section (17.1), and inquire whether the relation, which we have called formative, is a purely ordinal, or at the same time also an extensional characteristic. At this juncture I see no clear logical ground for my view—which may turn out to be the denial of mutual independence between order and extension—but it seems to me that the answer to our question *must* admit the latter alternative; although the element of experience, as defined in this chapter, is an abstraction and an intersection of colours, sounds, touches, and all other possible primitive sensations, I do not see how it could be attainable unless there were present in all these parts of Experience a characteristic of a special kind proper to these phenomena and enabling us to speak of the intersection of a given colour with a given sound. I think, therefore, we may safely define the Form of Experience as that attribute, in virtue of which we can divide Experience into elements (or distinguish them *in* Experience), and by reference to which we can also uniquely order all these elements.

(To be continued.)

## II.—REALITY AND SENSIBLE APPEARANCE.

BY H. H. PRICE.

IN our ordinary every-day frame of mind we all believe very firmly that there is a world of bodies or physical objects, revealed to us in perception, but existing whether perceived or not, and independent of our comings and goings. And the familiar question, how far or in what sense this belief can be logically justified, is one of the most important and interesting in that collection of problems sometimes called the theory of knowledge. When anyone sets out to find the answer, he is supposed to go to work as follows. First, by a great effort, he must expel all theories and preconceptions from his mind; and he must then, so to speak, begin afresh from the foundations, that is from the irreducible facts or data, which are 'given' in sense-experience. He must take these data just as they are, not begging the question by interpreting them from the outset in a certain way (*e.g.*, in the Naive Realist or again the Solipsist way), nor adding anything to them—as Reid for instance added that, whenever we have a sensation, we also have an irresistible conception and belief of the present existence of an external object.

No one, of course, will deny that this plan is an excellent one, though uncommonly difficult to follow. But surely (since so much depends on it) we should be very careful indeed to ask what *is* given; else, as the saying is, we may pour away the baby with the bath water. And the question is not quite so easy as it seems. For there is a sense in which everything that we ever find out is given; it must be there to be discovered, and must, so to speak, reveal or give itself to the discovering mind. And there is another sense in which *nothing* is given: for nothing can present itself to us, unless we are awake and more or less attentive, to receive the gift.

But we must not of course conclude that the advice 'to start from the given facts' is really meaningless. It means that we should start from a point at which there is no risk of error, or as little risk as possible. Now in our actual experi-

ence of *sensa*, when and as they are sensed, there is (we are often told) no risk of error. No doubt in *describing* them, we are apt to make mistakes, especially mistakes of detail.<sup>1</sup> But still—so it would be urged—there is no doubt at all that we really do experience colours, sounds, smells, pressures, and so on. In describing any particular sound (say) we may make mistakes: but still we know very well what sort of a thing a sound is, and we should never mistake it for a colour or a smell. Therefore, we are invited to conclude, if we start from colours, sounds and the like, in short from '*sensa*,' we start from what is certain and undeniable. '*Sensa*' or '*sense-data*' are *the* data, *par excellence*; and our business, it is urged, is to find an interpretation or explanation of them, and in doing this, we shall also be able to see whether or how far the common-sense interpretation of them is justifiable. Our result, of course, can now be easily predicted, from the very start: we are sure to arrive at one of two theories. We shall *either* conclude that physical objects are composed of *sensa*, are collections or systems of *sensa*: or we shall conclude that *sensa* are not themselves in any way physical, but are mere transient effects of a non-sensible physical world, with which they somehow or other '*correspond*'. In short we shall end with one kind or another of sensationalism; or else, on the other hand, with one kind or another of representationism. Neither of these conclusions is very attractive: for both are exposed to well-known difficulties. Indeed, the history of philosophy might almost incline us to say that both of them lead in the end to absurdity and self-contradiction.

There are good reasons, then, for pausing at the very beginning of our enquiry, and for asking once more exactly what *is* given. After all, there are occasions when it is one's duty to look a gift-horse in the mouth. And if we do this, we shall see that in the strict and literal meaning of the words pure or mere *sensa* are *not* given at all. Indeed so far from being certain and undeniable fact, they are at the best nothing but abstractions, which could not possibly exist or be given by themselves. The argument is familiar; but it is so important, that perhaps we may be pardoned for repeating it.

If anything were a *sensum* or *sense-datum*, clearly a sound would be one. Now every sound lasts for a certain time, and we apprehend it as thus enduring. Its endurance is a

<sup>1</sup> Of course people have been known to describe a colour as a vibration of ether. But it may be fairly replied that they mean something else. They are using the term '*colour*' in a particular sense of their own.

given fact, no less undeniable than that peculiar quality in virtue of which we call it a sound. But this given fact is certainly not given *to sense*. For we can only sense the present, not the past: yet we are able to apprehend a sound lasting for many seconds or even minutes; and such enduring sounds are part of our data, if anything is. Moreover, we apprehend the sound as a unitary something, enduring in time; not at all as a mere series or succession of 'audibles' or 'audita,'—first one *and then* another. No doubt there is such a thing as the 'specious present'. But even so, the duration which we apprehend in one specious present is not strictly speaking a sensed or sensible duration, though sometimes called so. For there can be no apprehension of duration without apprehension of sameness, as between the earlier and the later. And this apprehension, this rudimentary form of comparison (as it really is), requires intelligence as well as sense: or, putting it from the other side, that given sameness without which we cannot be aware of duration, either within a specious present or beyond it, is given indeed, and undeniable, but it is not sensuous. And even if the whole history of the Universe could be present to us all at once, 'totum simul': even so, it could not strictly speaking be present *to sense* as a 'totum'.

On some theories, of course, what we are aware of when (as we say) we hear a sound is a compact series of auditory sense-data. Now it seems plain that this is *not* really what is given. When I listen to the blast of a foghorn, it seems plain that what I am aware of is one long sound enduring for several seconds or minutes, and not a compact series of little sounds, each very like the one before. This does appear to be a matter of simple observation. But we need not appeal to observation only. Let us grant for argument's sake that the so-called long sound is really a compact series of short sounds. Even so, the sense-datum theory is not saved. For the compact and serial character of the series is ex-hypothesi to be real and given: but how can it be given to sense? how can it be a sense-datum, like one of its own members? If it is real at all, it must be non-sensuous; and therefore we still cannot start our theory of perception from mere sense-data. Again, we may look at the matter another way. What, we may ask, are those short sounds, of which you say you apprehend a compact series? What can you mean by a short sound? Any sound, however short, splits up into 'soundlets,' and they split up again. But if any sound, however short, is made up of soundlets, how, we may ask, is it held together? Plainly, it can only be held together by the principle of serial

compactness (if we may speak so) : and that, as we have seen above, is not sensuous, though (on this hypothesis) it has sensuous members. Thus the 'mere sense-datum' theory in any case breaks down.

Let us next suppose that our sound changes, as we say, while we listen to it: let it increase in loudness for instance. Here again no one will deny that the phrase 'the sound grew louder' corresponds to *some* fact, however it ought properly to be described: and this fact is as genuinely 'given,' as much 'really there,' as anything could be. Yet it is certainly not sensuous. For in order to apprehend it, we must compare present with past, and (beyond the specious present) we must also remember. The change of loudness is certainly not a sense-datum; no doubt the loudness itself is sensuous, and apart from it, we should of course be unable to apprehend the change; but because we apprehend something *through* sense, it does not follow that the something is itself sensuous. Thus if we insist on starting from mere sense-data, we shall have to ignore change altogether: but what right have we to ignore such a plain fact? We may of course resort, as before, to a compact series of sense-data. We may say that there is a compact series of auditory data, such that any datum  $d$  is less loud than any later datum  $d_1$ . But this, as before, is in the first place false—for we observe one changing sound, not a series of soundlets—and secondly even if it were true, it must still perforce admit that what is given is not merely sensuous; for the serial order must ex-hypothesi be given (else how do we know it is there?) and yet cannot be a sense-datum like one of its own members.

A similar argument holds with regard to space. No one will deny that the roundness of a round red patch is given. But though it is given *through* sense (*i.e.*, no one could be aware of it who was not a sentient being) yet it is not given *to* sense. For we cannot be aware of the patch as round, unless we are aware of the relative positions of its parts, of their unity, and of the distinction between it and its surroundings. In other words, an act of comparison, a recognition of identity and difference, must take place. And the objects of these acts, the spatial relations apprehended, the recognised identity amid differences, are not sensuous, but intelligible. We do not of course mean for a moment that they are unreal, or imposed by us upon the sensuous data.<sup>1</sup> We mean the very opposite. These relations, etc., are given; they are undeniably 'there,' and they could never be recognised if they were not.

<sup>1</sup> Or at least not by us so far as we are finite and particular beings, which after all is the usual meaning of 'us'. Cf. note at end.

But if we may put it so, they are not there in a sensuous way. The sensuous data of sight, as such, are only given to us when (as we say) our eyes are open. But we can think of spatial relations, or of difference and identity, whether our eyes are open or not. Hence they are in no way sense-data.

Thus our data, the undeniable facts with which we must begin, are never mere sense-data. If they were, we should never apprehend shape or duration or change: whereas in fact no data are more undeniable, more certainly given, than these. If we were merely sentient beings, aware of nothing but sense-data, our experience would fall apart (as the phrase is) into a series of vanishing 'nows' and disconnected 'heres'. And it is at least plausible to add, there would not even be any 'we' to have this experience, if experience it can be called; the unity of the self and the unity<sup>1</sup> of that which it is aware of do seem to stand or fall together.

But if the primary and undeniable datum is not a sense-datum, what is it? Perhaps we may best describe it as a unitary something having sensuous qualities. Or if we like to say so, what we are aware of is always a *substance*. And it is difficult to know whether the term sense-datum or sensum has any proper meaning at all. For a quality by itself—such as red or blue or loud—could never be a datum, apart from that of which it is a quality. And hence theories which profess to start from mere sense-data are apt to end in one of two ways. Either they make each separate datum a substance (in fact if not in name) and resolve 'things' into collections of these; or they postulate a world of material substances behind or beyond the sense-data, and regard the data as effects of those substances upon us, adding that the cause and the effect somehow 'correspond'—and then the manner of correspondence or connexion becomes an unfathomable mystery. No doubt it may sometimes happen that the term sense-datum or sensum is loosely used to mean not merely 'that which is given to sense' but also 'that which is given *through* sense,' in the meaning explained above. But this usage, if indeed it occurs, is surely so misleading that it ought to be abandoned.

We can now perhaps see what the problem really is which our enquiry about perception ought to discuss. The problem is *not*, given a number of sense-data, to determine the nature

<sup>1</sup> Of course difference implies unity, and the awareness of difference implies the awareness of unity. The mind which we are supposing could not even rise to the judgment 'this is not that': nor would it know the 'now' as now, or the 'here' as here.



of *their causes*. The problem is, given a something (and by the same kind of argument, substituting difference for unity, a number of somethings) having sensuous qualities, to determine its nature further. Has it for instance other qualities besides sensuous ones?

The first point we have to notice is what we sometimes call the unity of many qualities in one thing. According to our ordinary everyday view, that which has colour and shape has also temperature, smoothness or roughness, rigidity or softness, and so on. 'A thing,' in ordinary language, is something possessing all kinds of sensuous qualities. This common-sense doctrine seems quite right, regarded as a description of what we actually observe. (Only, in stating it, we must be careful not to beg the question in favour of Naïve Realism.) It is quite true that sensuous qualities fall as it were into groups: and each group has its peculiar and more or less unvarying spatial relations. But every such quality, we have seen, is a quality of *something*. Thus we must either suppose (1) that there is in each case one unitary something to which all the qualities in the group belong: or (2) if there are many somethings—a coloured something, and a sounding something, and so on—then at least they are all in the same place. The second alternative does not seem to be *a priori* inconceivable. But the empirical facts do not justify it. Let us admit for argument's sake that what we call a thing is really many things in the same place. How are we to explain the fact that those many things move as a whole, and that a change of one affects all the others? Suppose that (as we say) we strike a match. This will mean that (1) a tangible something is moved, (2) a visible something is moved, (3) an audible something makes a crackling and hissing sound, (4) the tangible something suddenly grows very hot, (5) the visible something begins to burn brightly. How, on the many-substance theory, shall we account for this solidarity and co-operation of the many substances? If they *are* not one substance at least they act *as if* they were. Moreover, it must in any case be admitted that the tangible something (for instance) has other qualities besides tangible ones. For otherwise, how does it cause all these curious effects in the other somethings? It certainly does not do so in virtue of the qualities of hardness, rigidity, and smoothness which make up its tangible being. Yet the change must be caused in some intelligible and explicable way. But if it is one and the same substance which reveals itself in diverse modes—visible, tangible, and audible—then we can begin to understand and explain.

What we perceive<sup>1</sup> then is in every case a unitary something having diverse sensuous qualities. We can now go on to consider whether these somethings or substances exist when we are not perceiving them. We shall try to show (1) that they do exist, and exist in space, when we are not perceiving them, (2) that their *sensuous* qualities are however apparent, *i.e.*, depend in part upon us for their existence. We may best approach this position by a preliminary consideration of Naïve Realism, as it is called.

The Naïve Realist is generally represented as holding that perception *makes no difference* to what is perceived. Thus suppose I am now perceiving a hard square table covered with a rough blue table-cloth; then, according to Naïve Realism the table would still exist and would retain its hardness and squareness even if I ceased to perceive it; equally, the tablecloth would continue to be rough and blue. This doctrine, which incidentally is far more common among philosophers than among 'naïve' or 'plain' men, is open to obvious criticism. But we must notice that it is perfectly right on one important point: So far as perception means a particular act of awareness or cognition or apprehension (or whatever we should call it) on the part of a finite and particular being, it cannot make any difference to what is perceived, (unless we call 'the being perceived' a 'difference'). For the very essence of such an act is to be aware of its object as that object really is. Moreover if anyone tries to deny this, he cannot do so without contradiction. For when he says 'acts of awareness make a difference to their object,' he claims to be asserting a fact, which really is so, whatever we may think about it; and yet, on his own showing, this fact is altered by his awareness of it, *i.e.*, is no fact at all; a person who takes up such a position renders himself incapable of making any assertion whatever.

If perception simply means awareness, then the Naïve Realist is right. But it may mean, or at least necessarily imply, much more than this. Perhaps we can never be aware of any sensible thing, unless 'our own body' as we call it, is present and in a certain condition. And its presence and state might make a difference to what we are aware of, though the act of awareness did not. Again, our mind might

<sup>1</sup> In view of our previous discussion, perhaps we may be allowed to use the term perceive to mean *both* sentient awareness of sensuous qualities, *and* intelligent awareness of one substance whose qualities they are. For as we have tried to show, we cannot possibly have the first without the second. We never have sentience without intelligence, nor qualities without substance.

have to be in a certain state, other than its state of awareness, in order to be aware of a sensible thing, and this again might make a difference to the thing. Either of these possibilities would be fatal to Naïve Realism; and both, we shall try to show, are actually realised.

The sensible thing which we call our body is always perceived (or part of it is) whenever we perceive any other sensible thing. So far as its mere presence goes, of course, we might take an 'instrumental' view:<sup>1</sup> we might say, the body (for some inscrutable reason) is the necessary *instrument* by which we perceive the sensible world. Or again, we may say that it *selects* our percepts for us. But unfortunately the thing which we call our body<sup>2</sup> is not merely present in all perception: what we perceive is *altered* by alterations of it. We need not search for recondite 'cases' to show this. The facts of perspective and the most everyday illusions are enough. If we walk round the table, to take the usual instance, the shape of what we see alters as our position alters. Mont Blanc, provided it is distant enough, is visibly smaller than my little finger. But as I approach it, its visible size grows and grows, till it far more than fills the whole field of view. The distant hill is blue, but as we approach it, it turns green. If we press our eyeball, the visible lamp-post is doubled: and its double dances about as we push our eyeball about. If we dose ourselves with alcohol or other poisons, we see all sorts of extraordinary things: but when the effect of the dose has passed away, we see them no more, or at least they are no longer extraordinary.

Such notorious facts as these, and there are thousands of them, do seem to show that the sensible thing we call our body is not merely necessarily *compresent* with all that we perceive, but *makes a difference* to all that we perceive. Thus it is highly probable, to say the least, that when I remove my body into the passage (as we say) the things which I saw just now in my room are different from what they were; and they may be very different indeed. Of course there are those who dispute this conclusion. Our body, they say, only selects certain sensibles for us out of a much larger mass of sensibles: it does not alter them. Thus the physical world on this view is composed of what we ordinarily perceive, plus a great many things (or 'sensibles') which are only revealed to us when we so to speak attune ourselves to

<sup>1</sup> Dr. Broad's term, see 'Perception Physics and Reality,' p. 197 and following.

<sup>2</sup> This tedious circumlocution is necessary, for to say 'our body' simply is to beg the question in favour of Naïve Realism.

them, by taking drugs, or falling into delirium tremens, etc. This interesting doctrine deserves a detailed examination. But it will perhaps be sufficient to answer, that it is logically bound to deny the possibility of *change*. For if the visible duplication of the lamp-post, when I press my eye, is not a change, but merely a manifestation of what all along exists: then by parity of reasoning, the coal is not really consumed or changed into cinders when I put it on the fire; both the coal and the cinders have always existed, but first the one manifests itself, and then the other. And by the same argument, if, as we innocently say, I go from Oxford to Cambridge, I am really still in Oxford: indeed I have all along been in both places. These conclusions are certainly rather strange. And indeed if we are going to deny so plain a fact as the fact of change, we may as well deny everything. But if we admit change at all, we must admit that sensible things are changed when my body is changed, *i.e.*, that the presence or absence of it makes a difference to them.

There are other facts, not perhaps quite so obvious, which compel us to believe that our mind, as well as our body, makes a difference to what we perceive.<sup>1</sup> Unfortunately, the issue here is apt to be confused. Opponents of Naïve Realism sometimes argue that the *act of perceiving* makes a difference to its object: but as we have seen, if perceiving means awareness, this is plainly false, and so far from defeating Naïve Realism, the argument annihilates itself. And there are at least two other arguments designed to show that what we perceive is mind-dependent, which either fail, or prove something else. First, it is sometimes held to be *self-evident* that colours, sounds, etc., could only exist when we are aware of them, that it is their very nature to be thus dependent. To this we can only answer, is it really so? And if it be further urged that colours, etc., are not only mind-dependent, but mental, we seem bound to meet this with a flat denial. For on any ordinary meaning of the word, can anything be 'mental' except acts of awareness, feelings and conations? Secondly, it is also argued that sensuous qualities must be mind-dependent, because they are private to each person. I cannot feel the toothache that you feel, and in the same way I cannot see the colour that you see. Now no doubt the acts of perceiving are private: but unless we confuse act and object, or jumble them together into one, it by no means follows that their objects are (of course 'object' here does not mean 'physical object' or 'body'). And even if it be

<sup>1</sup> Cf. Dr. Broad's *Scientific Thought*, p. 260 and following.

true that I can only perceive my colour, and you can only perceive yours, it will not follow from this 'privacy' that the colours are *mind* dependent. They might only be dependent on our respective bodies. Nor will it do to appeal to the indescribable character of sensuous qualities. No doubt you cannot describe to me what colour it is that you see when you look at the sky on a clear day: though you call it 'blue,' as I do, that does not describe it. But it does not follow that the colour that you see is in any way dependent on you. The reason why you cannot describe it may be simply that it is indefinable. And what is indefinable is not *therefore* dependent upon him who cannot define it.

But there are other good reasons, besides these insufficient ones, for saying that sensuous qualities are mind-dependent. What we see and hear is sometimes determined (in part at least) by our past experience, and present interest. We see, or seem to see, a large owl perched on a branch. We look again, more carefully, and see that it is really nothing but a stump, resembling an owl in shape; and after that, it no longer seems to be an owl at all. But in the first instance, we did not merely *think* it was an owl, but *saw* it so; yet a person not interested in those birds would have seen nothing but a stump. Again, we often mis-read words, or even sentences, in a way determined by our present hopes, fears and expectations. The aviator who comes out of a 'bad loop' sideways, does not merely think the horizon is tilted, but sees it so. Afterwards, when he looks more carefully, the tilt as it were transfers itself from the horizon to the wings of his machine.<sup>1</sup> If any Naïve Realist doubts this, he has only to go up and try. Again, if one may continue to quote one's own experience, on a road in the twilight I once saw or seemed to see a large goat with a white face coming towards me: but on a closer view, the goat turned into a man on a bicycle with a milk-can. Again, who has not sometimes seemed to hear his own name mentioned, when the speaker was really saying something different? And the fact that people talking a foreign tongue never seem to speak loudly or distinctly enough, shows that we supply a good deal from our past experience and present expectations when we are listening to our own fellow-countrymen. The hypnotic subject, too, can be made to see all sorts of things 'which are not really there' by the mere command of the hypnotist—or at least to act as if he did. People who suffer from 'delusions' or again delirious patients, likewise perceive or seem to

<sup>1</sup> Here we speak from personal experience.

perceive things that healthy persons cannot; and although their power of perceiving these peculiar things no doubt depends on the state of their bodies, yet the detail of what they perceive is determined by their past experience.<sup>1</sup>

We might add other and less startling cases. We are often unable to see a thing 'unless we know where to look for it' or to hear a sound unless we know when to listen for it. What we sometimes call training the senses consists very largely of forming certain permanent expectations (so to speak) so that we are able to perceive what we should not otherwise perceive at all. Again, there are the ordinary facts of attention and inattention. When we begin to attend to anything that we perceive, something or other seems to happen to it. It grows, as we say, more 'clear,' it 'stands out' from the general confused field of perceived things, further details 'emerge' or 'reveal themselves'. In short, some change quite certainly occurs. We generally hold that when we are attentive what we perceive is the thing as it really is; it follows then that in so far as we do not attend to a thing, which yet is 'before' our consciousness, or 'in the margin' of it, the thing is altered. Either attention or inattention must alter things, since a change certainly occurs in them when we pass from the one state to the other. If we deny that this change really takes place, then (1) we must affirm that one and the same thing can be both 'confused' and 'clear' at the same time; (2) we are logically bound to deny *all* change of every kind.<sup>2</sup> But if we refuse to take this desperate course, we must admit that our minds do make a difference to what we perceive: not of course in so far as we *perceive* it, but in so far as we are attentive or inattentive.

In view of all the facts that we have cited—and there are of course infinite multitudes of the same kind—we seem bound to abandon Naïve Realism, and to hold instead that sensuous qualities, since they vary with the states of our bodies and minds, are to some extent dependent on our bodies and minds, and cannot exist apart from them. It does not follow in the least however that the somethings of which they are qualities are thus dependent: it only follows that these somethings have just those qualities under certain conditions (*viz.*, in our presence) and not otherwise. And it seems plain, too, that although sensuous qualities are partially dependent on us, they are not wholly so dependent. If they were, an inspec-

<sup>1</sup> See James' *Principles of Psychology*, vol. ii., p. 114 and following. Also Dr. C. D. Broad: *Scientific Thought*, p. 260 and following (referred to above).

<sup>2</sup> Cf. argument against the 'selective' theory above.

tion of our bodies and minds should enable us to explain and predict in detail what we were to perceive in the future. But not only can we not do this, we cannot come anywhere near it. We can predict that if a man's eye or optic nerve or brain is damaged in a certain way, he will not be able to see anything. We can predict that a person who believes strongly in spiritualism is more likely to see things at a séance than a sceptic. But we cannot go much beyond this. We certainly cannot come anywhere near explaining the whole of our perceptive experience in physiological or psychological terms. Therefore it is quite wrong, and very misleading, to speak of sensuous qualities as mental or physiological: if we mean 'dependent on mind and body,' we should say so: if we mean more, we are wrong.

Such considerations as this, lead us to a theory of *appearance and reality*.<sup>1</sup> Ordinary common sense has of course passed far beyond Naïve Realism. No plain man, however plain, at any period later than the stone age, can really have held that trees and mountains swell and shrink as he walks about, or that one and the same river has both convergent and parallel banks at the same place. Such opinions he leaves to philosophers. His own theory is that the tree *looks* or *appears* larger and larger as you approach it, and smaller and smaller as you retire from it: but *really* according to him its size is unaffected by your movements. Again, a stone *feels* heavier when you are tired, and lighter when you are fresh: but its real weight is unaffected by your bodily state. Again, if you are interested in birds, the tree stump may *seem* to be an owl: if you are interested in animals, it may seem to be a squirrel: but really it is just a piece of wood, and your interests and past experiences do not alter it in the least. In general, then, according to the common-sense theory, *what* appears is independent of us, and exists unchanged whether we are there or not; but the *way* it appears, the sensuous qualities it appears to have, depend partially on us, on the states of our bodies and minds—are as it were plastic, and vary with alterations of those states.

This is the doctrine which we wish to defend; or rather, we wish to maintain that it states the problem rightly and approaches it in a helpful way, though as a solution it is obviously rather crude and ill-worked out. We may attempt

<sup>1</sup> Cf. Mr. H. A. Prichard's *Kant's Theory of Knowledge*, ch. iv.: Dr. G. Dawes Hicks, *Aristotelian Society Proceedings*, 1913-1914 (especially, p. 35) and 1916-1917. I did not see Mr. L. A. Reid's treatment of this topic (*Knowledge and Truth*, ch. vii.) till after these remarks had been written. In the main, he seems to support the position here defended.



to clear the matter up, by stating and discussing some obvious criticisms.

In the first place we have to ask, what is the criterion by which common-sense distinguishes the apparent from the real? Why for example does it not hold that the distant railway lines really *are* convergent and only *look* parallel when you come close to them, or that the duplication of the visible lamp-post (when my eye is pressed aside) is real, and its ordinary singleness merely apparent? It may seem as if the criterion were nothing but practical convenience. Common sense—so it may be said—regards as real those sensuous qualities which are practically important or interesting to it, and degrades the rest to the status of appearance; but such a procedure, the objector may urge, is entirely arbitrary, and we have just as good a right to reverse this distinction—in other words, the distinction between appearance and reality is ultimately and for theory no distinction at all, however convenient it may be for practice.

The reply to this is fairly plain. Common sense does have a criterion, and applies it with very fair consistency. Those qualities of perceived things which vary with the free movement of our body, and vary reversibly, are called apparent.<sup>1</sup> Those which do not thus vary are called real. Suppose for instance that there is a piece of cake on the table. When I walk away from it, looking at it as I go, its visible size shrinks. If someone eats a quarter of it, its visible size also shrinks. But the first shrinkage is reversible—I have only to walk back, and all is well; but the second is not, and no amount of movement on my part will alter it. So also with the duplication of the visible lamp-post. When I push my eye aside, what I see is duplicated: but this duplication is reversible, and depends only on me. But if another lamp-post were planted beside the first one, that would be a different kind of duplication, which would not depend only on me. Again, let us consider the familiar stick half immersed in water. Here the visible bentness varies with my movements, *i.e.*, with my position relative to the surface of the water and the stick, and there is no tangible bentness. Or, to take another common case, if I look at a telegraph pole through a badly made window pane, what I see is rather curly. But I do not think that the pole is really rather curly, because, as I soon discover, the amount and kind of curliness depends on my position: and if I can get to the other side of the window, the pole is no longer curly at all.

<sup>1</sup> See Dr. Stout's *Manual of Psychology* (ed. iii.), p. 460 and following; also *Things and Sensations*, p. 11.



In all such cases we find that certain sensuous qualities vary with our free movements, but certain others do not. And it seems perfectly reasonable to draw the conclusion which common sense does draw, *viz.*, (1) in so far as anything varies with our free movement, it is only apparent, *i.e.*, if we were not there, it would not exist, (2) in so far as anything does not thus vary, it is real, *i.e.*, would still exist in our absence.

And this principle is extended further by common sense to cover cases of dependence on the mind. So far as what I perceive depends merely on my wishes, or my past experience, or my present interests, it is regarded as apparent: so far as it is not thus dependent, it is regarded as real. We detect this dependence on the mind much as we detect dependence on the body: *i.e.*, we notice that some sensuous qualities sometimes *vary* with our mental state. Our mis-hearing and mis-reading of words, for instance, varies with the nature of our pre-occupations. In this connexion we speak, stretching language somewhat, of 'standpoints' or 'points of view'. "The way a landscape looks to a man depends very much on the point of view from which he approaches it," we say. Here we may mean *either* point of view in space (*e.g.*, is he standing on a hill or in the plain?) or mental point of view (*e.g.*, is he a geologist or a painter or a historian?)

What depends on my 'point of view' then, in either sense, *i.e.*, on my condition, bodily or mental, is regarded by common sense as apparent. Not of course as *merely* apparent. For according to common sense at least, nothing that we perceive depends *entirely* on our state. We can only alter it up to a certain point by change in our bodily and mental state, and no farther; and this applies even to the visions of delirium or hypnosis.

It cannot then be denied that common sense has a criterion for distinguishing between what things are and what they appear to be. But the distinction itself may next be attacked.

"For," it may be said, "what is really meant by the statement that A is *b* and appears to be *c*? Surely it either *is* *c*, or it is not. But when you say 'appears to be *c*' you are trying to have it both ways. 'The straight stick looks bent' can only mean, if it means anything, that the straight stick *is* bent when someone sees it, and that is a plain contradiction. No doubt something is bent (for you see it), and something is straight (for you can touch it); but the two somethings are not the same. Either they are two different sensibles,

and 'the stick,' is just the collection of such sensibles. Or they are two sensa, caused by one physical object, acting upon your brain and mind: and if you are in earnest with this view, you will soon have to give up the physical object, and content yourself with a barren phenomenalism, supplemented by a belief in a dubious or unknowable Thing in Itself."

But these distressing conclusions can perhaps be avoided: (and indeed if they could not, we might well despair, for as was suggested above, both seem to tend to absurdity). We must admit of course that appearing is a kind of being, that it is a kind of reality, if you will: only it is not the physical kind, for it is partly conditioned by the presence of sentient minds and bodies. And there is really no contradiction in this. A thing may have in different relations qualities which would be incompatible if it had them in the same relation. A man cannot be both polite and rude in the same relation. But he can be polite to his superiors and rude to his inferiors, without the slightest contradiction. In the same way a penny may be round 'for me' and elliptical 'for you'.<sup>1</sup>

But perhaps we have not yet reached the difficulty. It may now perhaps be admitted that A may appear C to me and C' to you, without any contradiction. But the difficulty is, that these qualities often seem to be *in the same place*. Suppose that on the table there is a prism through which I look at a black ink-pot with a red book beside it. Then, when I commence to look through the prism, the ink-pot will appear to be displaced sideways, into the place where the book was. The book, too, will appear to be displaced sideways by an equal amount. But of course for touch there is no such displacement. Thus one and the same place looks as if it were occupied by an ink-pot, and feels as if it were occupied by a book. And it may be thought that these two sets of sensuous qualities, the visible qualities of the ink-pot, and the tangible qualities of the book, cannot both occupy the same place. Even when we add that they occupy it in different relations—the one in relation to the tactual regions of my brain and the other in relation to the visual regions—

<sup>1</sup> We must however notice once again that 'for me' itself stands for *two different* relations: (i) it stands for the so-called cognitive relation—a thing is 'for me' when I am aware of it, or apprehend it; and *so far*, a thing is for me what it is in itself, for that is the very meaning of awareness. But (ii) 'for me' also indicates that the thing is related to my body and my psychical nature; and by virtue of *this* relation, it acquires new sensuous qualities. There is an analogous distinction between 'A appears' (= 'presents itself, comes to be apprehended') and 'A appears C'.

the critic may not be entirely satisfied. "It is not merely"—so he may insist—"that one space appears to be occupied by different *qualities*: it appears to be occupied by different *substances*. And 'appears to be' as we have agreed, means 'really is in a certain manner, and under certain conditions'. But is it not monstrous to say that, under any conditions whatever, two substances can be in the same place?"

To this we answer, that physical being and apparent being are two very different things. What is true of the one need not be true of the other. It is very likely (though even here are we quite certain?) that two substances cannot *physically* occupy the same place. But it does not in the least follow that they cannot *apparently* occupy it. We only suppose so, because we think that physical reality is the only kind of reality there is;<sup>1</sup> we therefore equate the apparent with the unreal,—simply because it does not happen to interest us. The sand that appears to be water will not quench our thirst; and the cake that looks smaller at a distance will not cost less; so we think that these ways of appearing are nothing at all.

Moreover, there is no doubt whatever about the empirical facts. One's face does, as a matter of plain fact, appear to be behind the mirror, though what tactually appears in that region may be very different. The ink-pot (in our example above) really does look displaced, though it does not feel so. The compass-points really do feel farther apart when applied to some parts of the skin, than they do when applied to others: but they do not necessarily look so. It is no good to say that in such cases "there is really nothing there". For there *is* something there: but apparently so, and not physically. Further, if we are going to admit a common world at all, we shall have to allow not merely that the ink-pot can look to be in the place where the book *feels* to be: but also that it can look to be in the place where the book *looks* to be. This happens when one person sees them with the naked eye, and another through a prism. In such cases the very same region of space which to A looks black, to B looks red; that is, if we allow that two people can in any sense at all see the same thing.

We may, it is true, speak of 'private spaces,' giving one to each person, and even to each sense of each person.<sup>2</sup> But

<sup>1</sup>Or if it occurs to us that there is also a kind of reality which is mental, we say 'what is apparent cannot be physical, therefore it must be mental': which is a little better than 'therefore it must be nothing at all,' but not much.

<sup>2</sup>Perhaps even to every mirror and every pair of spectacles.

the term space seems here to be used in a somewhat curious meaning; it seems to mean an extended 'field' whose occupants, in respect of their shape and size, obey peculiar laws, which do not hold in other fields. Thus 'sight space' means 'the apparent field,' whose occupants (1) appear to sight, (2) vary in shape and size with the observer's kinæsthetic sensations. But if we endow each kind of sensuous appearance (and even each mirror) with its own 'space,' in this sense of the term space: then we shall still have to admit that some regions of (say) 'sight space' *coincide with* some regions of (say) 'touch space'; even if we find it hard to say exactly which regions do. And in that case, we shall not avoid admitting that a red patch in my 'sight-space' may coincide with a blue patch in yours and a green patch in someone else's: more exactly, one and the same space may be occupied simultaneously by a thing which looks red, a thing which looks blue and a thing which looks green—or again, by one thing which looks all three.

We may conclude then that this criticism breaks down. Granted different persons to whom it appears, or different senses of the same person, one and the same 'thing' may appear to possess, at the same time and place, qualities and characteristics which otherwise (apart from the relation to different persons and senses) would be incompatible. The physical nature of things and their apparent nature need not be at all points the same: yet of course they cannot be in all points different, for it is the same things which physically are, and appear to us.

But if this theory of appearance be accepted, there still remains the question "What exactly is it that appears?" Common sense answers, it is always a body or physical object, extended in space, enduring in time, capable of motion and change. We have seen in a general way how this answer is arrived at. What we perceive varies in some respects with our mental and bodily state, but by no means in *all* respects. If I walk forwards, what I see appears to grow larger: and its apparent increase in size depends solely, as we find, on the change in my body's position with respect to it. But the other qualities of what we see are not all of them thus determined. That it should be a house which thus appears to me to grow larger and not a hawthorn tree—this is a fact over which my bodily or mental state seems to exercise no control whatever. And what do we mean by 'its being a house'? We mean that its visible parts, however they may appear to vary in detail, are always related in a certain way. For example the blue sloping roof is always above the first floor windows: its depth is always a certain multiple of the

height of the window: its width is a certain multiple of the window's width. Again, the central window of the first floor is always visible above the front door, however the apparent sizes<sup>1</sup> of both, and their apparent colour, may alter as I move. Had it been a hawthorn tree that was appearing to me, and not a house, the unvarying spatial relations of its parts would have been very unlike this; however their apparent size might vary, there would always have been a roundish green top part, and a slender lower part—the shape in short would always have been the shape of a tree.

In other words, according to the common-sense view of it, my body's position does make a difference to the object, and causes the object's apparent size and shape to differ from its real size and shape, but this difference can be 'allowed for' or eliminated by the proper procedure. If two visible objects, or two parts of one object, are at the same distance from my eye, then the effect of my eye's position will be the same in both cases; and so I shall see their relative sizes as they really are related. If at the same distance from my eye, A looks twice as high and half as wide as B, then (other things being equal), it really is so. Of course this only gives us relative sizes: but it seems plain that relative size is the only kind of size there is—not relative to a *mind* of course (least of all to our minds) but to *the rest of the spatial world*. Again, this procedure is only valid, 'other things being equal'. But if they are *not* equal, we can always apply it further: if for example A, though as far from me as B, is appearing to me by means of a telescope, whereas B is appearing 'to the naked eye'—then again I must equalise the difference in the two cases, and so eliminate it. Either I must look at both things through the telescope, or at both through the naked eye; and then other things being equal, I shall see their relative sizes as they really are. Of course, other things may not even now be equal. One of my eyes may be different from the other. But this, too, I can detect and allow for. I can detect it: for if I shut one eye, the view will then appear different. And I can allow for it: I have only to look at my objects with the *same* eye. Real shape (in the vertical plane) is discovered in the same way as real relations of size: and real three-dimensional shape, which never appears at all as it really is, has to be discovered by a number of views, each of which gives the real shape in a new vertical plane.

The same sort of procedure is applied by common sense to illusions of motion and rest, and to tactual illusions. Common-sense is always seeking for the *real relations* between two or

<sup>1</sup> Apparent size means "size of that region of my field of vision, which is apparently occupied by the object".

more things: and it can always get at these by arranging that the position and state of our body and mind with respect to the things is the same. In order to know what kind of sameness is relevant to each case, we have to observe what variations of our bodies and minds affect what apparent qualities of the object. For example, a thing's distance from my head makes all the difference to that thing's apparent visible qualities, but no difference to its apparent tangible qualities. In the latter case the important question is "what part of my skin is the thing in contact with?" My interest in birds determines that I shall see the tree stump as an owl: but it does not affect the nature of what I see when I am looking out for the next motor-bus.

Common sense deals with secondary qualities in the same way. But here it is very difficult to know (say) what the real colour of a thing is, as distinct from its various apparent colours: these vary with many other circumstances besides the state and position of our body, and that makes the matter very much more complicated. We may even suspect (though one cannot see why it is certain) that the cloth which appears blue to me is not in itself coloured at all: so intimately does colour seem to vary with the state of the eye and brain. But if it is not blue, still it has some quality or other, which appears to be blue. And this 'some quality or other,' may properly be called a secondary quality, since it will be related to the thing's real extension in the same sort of way as apparent colour is related to apparent extension: only we have no reason to suppose, and some reason to deny, that it is at all like what it appears to be. So also with sound, smell, and the other secondary qualities. They must really *be* something, or rather they must be real qualities of something: but their real nature is almost certainly very different from their apparent nature. It is of course very hard to say exactly what view is held by common sense on this matter of secondary qualities: in actual fact it probably varies very much with the holder's education, *i.e.*, with the extent to which he realises how many 'other things' must be 'equal,' if two trees (say) are to appear to have the same colour. But so far as his knowledge goes, he seems to apply the same criterion as usual; *i.e.*, he asks, with what states of my body or mind does this colour (or sound or smell) vary, and in what respects is it constant amid all such variations? We have tried to state the view which common sense ought (so to speak) to hold on this point, if it is to be faithful to its own criterion. And we must incidentally mention that there is a certain view of secondary qualities which it certainly ought *not* to hold—the view which regards them as *sensa* or sensations

'in us,' produced by the action of an imperceptible physical world, or again as a sort of veil or screen of *tertia quaedam* set up between that world and us. For the very essence of the common-sense position is that it is always the real world itself which appears to us; however much various apparent qualities of it are dependent on us (and none are *wholly* so dependent). Yet we can always, by careful investigation, discover at least the real spatio-temporal or primary qualities as they really are. For in some respects, according to common sense, what appears and what physically is are one and the same.

We have gone into the common-sense view at some length, and have tried to explain in some detail its method of distinguishing the apparent and the real, because we believe that that view and that method are (in the main at any rate) perfectly correct, provided we state them with due care. But it is now time to consider a very important line of criticism, which we have not yet touched upon.

"This method of distinguishing appearance from reality," we may be told, "is very well so far as it goes, but it does not go far enough. What varies with variation of my bodily and mental state is apparent: very good. But we are not entitled to assume that what does *not* thus vary is physical. We grant that a tree always looks larger than an apple, when they are both at the same distance from us: and that the one always feels larger than the other when we touch them. And no doubt, if there is this unvarying relation between them so far as they appear to us, there must also be a relation between the things as they are in themselves, apart from us. But we must not conclude that it is a *spatial* relation. If what we see and touch always possesses extension, and always has some unvarying spatial relations, these characteristics may very well be due to an unvarying state of our body or mind—which we do not notice, just because it does not vary. Space and Time would thus be only apparent; but they would not be 'subjective' in the way that secondary qualities are: for they would not be dependent on the particular and accidental states of this or that percipient, but on the permanent and essential nature of all percipients. The same will apply to causal order."

There is nothing *a priori* absurd about such a view, of course. But it seems powerless to explain the facts *in detail*. Suppose I wind up the clock—or what appears as the clock—before going to bed. When I wake up next morning, I find (i) that it is still going: (ii) that the hands are eight and a half hours farther on than they were. Now if the spatio-temporal characteristics of the clock are only apparent, how am I to



account for these facts? They become quite unintelligible. But if the clock still exists as a mechanical structure, even when it is not appearing to me, I can at any rate partially understand what happens. If I open the back, I can see a spring driving a number of cog-wheels, whose motion is regulated by an escapement, and communicated to the hands. I can *perceive* all this happening, and to some extent I can *understand* what is going on, how the motion is communicated and regulated. But if all this machinery were merely apparent, then why should the hands continue to move when I shut the back of the clock up again? And why does it continue to tick? The machinery as machinery would then have ceased to exist, just as the yellow colour of the wheels would have ceased to exist: what still exists on this hypothesis is the something or system of somethings which appeared as the clock, but what qualities they now possess, we cannot tell. The continuance of the motion and the ticking becomes quite unintelligible—miraculous indeed, when we come to think of it. If this theory were generally held, people would certainly cease to make any kind of machinery. For one could never tell how the inner parts of one's machine would behave; once they had ceased to be perceived, anything might happen.

Again, if a mouse appears to move in a straight line across my room, towards a piece of cheese (or what appears as such) I can understand that it must reach the cheese in a certain time. I can also understand its motives, *i.e.*, why it chooses to move so. But now suppose that just after it has started on its course I shut my eyes for some seconds. When I open them again, there is the mouse in quite a different place much nearer to the cheese than before. Now if when my eyes were shut he continued to be an extended creature in motion (as he appeared to be when they were open), and if the room and the cheese continued to have size and shape; then I can more or less understand how he got to his new position. But if size, shape and motion are merely apparent, I cannot come anywhere near to understanding. If they are merely apparent, I shall still be able to understand more or less what happens or appears to happen so long as I can perceive it;<sup>1</sup> but what happens in my absence (if 'happen' is the word)—this becomes an unintelligible miracle.

Indeed, this assumption that space and time are merely apparent, existing only in the presence of percipients, has such amazing consequences, and turns our world upside

<sup>1</sup> *I.e.*, I can still understand, *e.g.*, that if X *appears* to move in a straight line at a velocity of 3 ft. per second, it *must appear* to reach a point 6 ft. away in two seconds.



down so completely, both for thought and for action, that we may wonder how anyone could ever seriously maintain it. Our entire life is based on the opposite view. Every time we put a teapot on the table, or get into a train, or put on our clothes, or eat or drink or take medicine, or walk downstairs, or sit in a chair, or open a book, or post a letter, or smoke a pipe—in short in every action of our lives—we assume that space and time are not only apparent but also physically real, and that the things which appear to us in perception have spatial and temporal qualities, even when they are not appearing to us or to anyone else. And why do we continue to make this assumption, both in theory and practice? Certainly not through mere laziness, or because such an assumption is more agreeable to our verbal habits or inherited prejudices. We act as if the table was really (and not merely in appearance) square and rigid, because we think it is so; we do not think it is so because we act or wish to act as if it was. On the contrary, we have *reasons*, and the best of all reasons for thinking thus; if we do not, what we perceive (with all that implies) becomes utterly *incoherent and unintelligible*—our world so to speak falls to pieces. To use Dr. Bosanquet's phrase, it is a case of "this or nothing".

Nor of course could we even begin to act, unless we had some fairly coherent and rational notion of that upon which and within which our action is to take place. We must at least expect that certain consequences will follow, and we must have some sort of ground, however inadequate, for this expectation. But if the spatio-temporal qualities of things, and that means their dynamical and mechanical properties also, are merely apparent, and exist only when and as perceived: then there is no ground for expecting one result to our action, rather than another. For our perception is really very fragmentary: we never perceive the whole of any object, inside and outside, upon which or with which we wish to act. And if the unperceived parts of that object have no spatio-temporal properties, we cannot even guess how they will behave. For every guess, however wild, is based on understanding, however partial. But we cannot hope to understand that whose real nature (as distinct from its apparent nature) is completely unknown to us. Why do we even expect that the house will be there when we come home in the evening? If bricks and mortar and wood really possess the properties of shape and size and rigidity, which they appear to possess, then we have ample reason for our expectation. But if they lose these properties as soon as we turn our backs, who knows what may not happen? When we come back, we find that the fire has gone out, that our chair is occupied by the cat,

that our books have been tidied up so that we cannot find them. But how can we even begin to explain all this, or take measures to prevent such occurrences in future, if no things deserving the names of fire and cat or of book or of tidying agent, have existed in the interval? Yet an unextended thing which merely appears as a fire could certainly not be regarded as being in itself or 'really' a fire, nor could it be expected to behave as apparent fires do. For (if this theory is right) it only behaves as a fire when it is appearing to us. And what could we make of an unextended cat?

Moreover, it is not enough that the things we perceive should possess merely *some* spatio-temporal qualities or other when they are not appearing to us. To make our experience intelligible much more than this is required. They must possess certain *determinate* spatio-temporal qualities. The fire for example—or rather the collection of burning coals—must be really, not only in appearance, slightly smaller than the grate; it must be really, and not only in appearance, at one side of the room; else I cannot explain why the ashes are just where they are when I come in or why the chimney is sooty, and not (say) the windows. The assumption that the coals and the room have some real size or other is not sufficient. Their relative positions and sizes must *really* be very much what they *appear* to be, when (by the use of the common-sense criterion) I have eliminated the effects of my bodily position. Again the cat must really be an animate organism, really possessing much the same nature as it *appears* to possess, if we are to explain and account for its getting into the chair. Lastly, the real relative sizes of my books on the one hand, and the cupboard on the other, must really be very much what they appear to be when I have allowed for my bodily position: otherwise, how could they have been put inside the cupboard when I was away? If we had taken a complicated piece of machinery for an example, this point would be still more obvious. The behaviour of an aeroplane or a torpedo (say) is only explicable if it has not merely some spatio-temporal qualities or other, but certain highly determinate ones, very much like those attributed to it by its designer.

We conclude then that the common-sense theory of appearance and reality is perfectly tenable, though not to be accepted uncritically. 1. Its *mode of statement* ("the penny is round but looks elliptical") is the right mode of statement. For it does not split asunder the substance and its sensuous qualities, on the one hand, as the representative theory does; the physical real, according to common sense, is 'immanent,' enters in its own person and not by proxy

into our consciousness, whereas the representative theory makes it 'transcendent' and in the end (if we are in earnest) unknowable. Nor on the other hand does common sense uncritically assume that the sensuous qualities of a thing are its only qualities, belonging to it by itself, irrespective of circumstances, and (especially) irrespective of the diverse physiological and psychological nature of various percipients to whom it appears: we have seen where *that* assumption leads—to the 'selective' theory of perception and to the denial of all change. 2. The common-sense *criterion*, for distinguishing between appearance and reality, is also the right one; in so far as a thing's qualities vary with variations of our bodily and mental state, they depend upon us, and are only apparent: in so far as they do not thus vary, they are real or physical, and exist independently of us. These non-variant characteristics of things are primarily, certain spatio-temporal characteristics, and a certain causal order. In so far as perceptible things possess these characteristics, we can understand and explain their perceived behaviour, not wholly indeed, but to a very considerable extent. And unless we agree with common sense that these characteristics are not merely independent of particular and accidental states of our minds and bodies, but entirely independent of them in all respects, we cannot in the least explain or understand or predict the unperceived behaviour of things, as revealed in its perceived effects.

In this case, as in some others, it almost seems as if the ordinary man were more philosophical than the philosophers.<sup>1</sup>

<sup>1</sup>Two other points may be worth noting. (a) If the way in which things appear is dependent partly on the things and partly on ourselves it looks as though 'minds' and 'things' were not so wholly separate, so externally related, as some current theories represent them to be. The 'cognitive' relation must no doubt be external: but the relation of appearing is certainly not so. And a mind to which nothing appeared would surely be a mere nothing, a bare possibility—certainly not a self-existent substance. (b) Our conclusion is not in the least inconsistent with the view that the physical world as such depends ultimately upon intelligence, or (in Green's phrase) implies a 'spiritual principle'. We only wish to contend that it is independent of any intelligence and any consciousness which can be called 'yours' or 'mine': or (if there is ultimately only one intelligence) of those particular and accidental characteristics of it, in virtue of which it is called 'you' or 'I'. That which comes into the room and goes out of it, is attentive and inattentive, interested in this and not in that, that which goes to sleep and wakes up, comes into existence and ceases to exist—of this at least the physical world, as physical, is wholly independent. Again, if the view we have been defending is thus perfectly consistent with Idealistic doctrines (provided they are not 'subjective') neither does it give them any direct support, at any rate at first sight.

### III.—SUGGESTIONS FROM AESTHETICS FOR THE METAPHYSIC OF QUALITY (II.).

BY P. LEON.

STARTING with the secondary qualities we have widened immensely the domain of quality and at each step we have considered the analysis that may be given both of the apprehension and of the quality. We might now go on to draw conclusions. But before we do this we must substantiate the validity of our list and above all see that the inclusion in it of æsthetic wholes is not surreptitious. What we have been dealing with, it may be objected, are not qualities at all but feelings or emotions. Art expresses, objectifies, externalises or embodies our feelings or emotions or states of mind. In the æsthetic activity, we project our feelings into an object, we experience them in it.

#### *Feeling.*

Feeling is a word useful indeed for literary critics ; for it has done secular service in enabling them to write pages of rhetoric. In philosophy, it is a word of ill omen ; it is most rampant where there is least understanding. Æsthetic it has placed in sad though merited disgrace. It or its equivalents, state of mind, emotionality, appetite, propensity, gradation of the practical activity, affection, desire, aspiration, yearning, have perhaps marred the lucidity of Croce's æsthetic of which we must otherwise profess ourselves the humble pupils. Wherever it is given, the account of expression, objectification, externalisation, embodiment, projection, is mythology of the weirdest and most perplexing. No sooner does the word feeling emerge, whether in Kant or Lipps or elsewhere, than there is confusion and contradiction such that it is scarcely possible to grasp or to controvert anything. For this reason alone, we should be justified in steering clear of any discussion which uses the word feeling, and in leaving an enquiry which employs other terms, to commend itself as a substitution on its own merits. Moreover, we might say that feeling, like sensation, is a psychological distinction which does not here

concern us. But the main purpose of this enquiry is to bring into the light of day what is generally shrouded in the black fog of feeling. For this, we must at least indicate the fog. We shall touch upon feeling mainly in its connexion with æsthetic.

There is one use of the word feeling, so wide that it can scarcely be misleading. When a work of art or an object is said to "express" bright speed, white simplicity, a light aerial elegance, or majesty and stateliness, if I say that the work or object gives me the feeling of bright speed, white simplicity, or that I feel the light aerial elegance or the mountain's majesty and stateliness, feeling here can only mean apprehending. It can only have the sense it would have if I said I felt the greenness or the hardness or the sweetness of a thing. There can be no objection to the word, if it be realised that in all these cases we have knowledge, though it be knowledge of quality, and knowledge which is not judgment. It must also be realised that just as I do not mean in the above cases that I feel or am, green or hard or sweet, so I cannot or must not mean that I feel or that I am majestic and stately, brightly speedy, whitely simple or lightly and aerially elegant. Feeling, however, is not the happiest term to guard us against these confusions.

A work of art, however, is also said to express a feeling of pity, or love, or joy, or sorrow, or admiration. It is also considered to rouse these feelings in us. "We sicken," we are told, "with the same maladies as the poets, and the singer lends us his pain. . . . There is no passion that we cannot feel, no pleasure that we cannot gratify" (O. Wilde, *Critic as Artist*). "Poetry," says Mr. W. H. Hudson, "as distinct from science, deals with the aspect things bear and the appeal they make to our emotional nature. . . . Poetic truth is fidelity to the feelings of pleasure and pain, hope or fear, wonder or religious reverence which things arouse." The poet is supposed to clothe the world with the glory or the sombreness of his own soul. His landscapes, Corot maintained, were moods of his own. It is here that we must look about us and enquire into the meaning of our terms. If it were intended to characterise the poet's mind by the visions which he has, by what he apprehends, if Corot had meant that his moods were his landscapes, and if by the feelings of love or pity or admiration we meant those states of mind which are ours when we apprehend the loveliness or pitifulness or wonder of the world, all this would perhaps be intelligible. But this is precisely what is not meant. The above utterances rather arise from an idea that there are certain qualities such as

green, red, sweet, etc., which belong to the world, while others such as weirdness, wonder, glamour, pathos do not belong to it but have to be introduced by our feelings.

We receive but what we give  
And in our life alone, does nature live;  
Ours is her wedding-garment, ours her shroud.

So Coleridge. But Coleridge was a philosopher as well as a poet. Many artists have been humbler about the human mind. They have emphasised rather their receptivity and have looked upon what they gave as coming upon them, all from without. We must ask: Can feeling introduce anything? Considering now the term feeling, we find that it can be given one sense which is at least consistent. It can be made to stand for mere pleasure and pain or for anything else if there is anything else in the mind like mere pleasure and pain, for the "subjectively subjective," for what there is when the mind has been divested of its apprehension or when the apprehension has been divorced from what is apprehended, in short for mere psychical being. But surely such mere psychical being is featureless, characterless. A pleasure as mere pleasure does not differ from another nor a mere pain from another pain, except in intensity and duration. What character and difference in features pleasures and pains present, they have from the mind's commerce with the world, from what we apprehend. The pleasure in push-pin differs from the pleasure in poetry only because push-pin differs from poetry. So my feeling or state of mind when I am contemplating a mountain, differs from my state of mind when I am contemplating a plain only because the mountain is different from the plain. It is the world then, in this case the mountain or the plain, that invests feeling with character and not feeling which characterises the world. The mountain is not solemn and awful because I have a feeling of solemnity and awe which I project or externalise into it; my feeling or state of mind may be said to be of awe and solemnity because I apprehend these qualities in the mountain.

If then in æsthetic theories and discussions, the same thing were meant by feeling as we mean by it here, it would be extremely paradoxical to maintain that the characterless and featureless lends character and features to the world, and that, presenting no differences, it can be embodied, expressed or externalised in different things. Yet something like this must be meant when feeling, or states of mind, or the soul is pitted against the world.

However, rather than mere pleasure and pain or bare

psychical being, it is the emotions that are thought of: hope, anger, love, pity. The emotions are not featureless and one does differ from another. Now an emotion is a complex psychological situation. It includes (a) many directions of the will, one mode of commerce of the mind with the world; (b) many acts of apprehension in the way of judgments, e.g., in hope, I judge that I shall prosper; in anger, that the offender is a scoundrel; in love, that a certain woman is "a lass unparalleled"; (c) some though little apprehension of quality unattached, e.g., when in anger I "see red"; when in love I see radiance; hopeful, I look at the world through rose-coloured spectacles. These qualities we may with some psychologists analyse into "somatic resonances". It is through this trinity of contact with a world, though not necessarily merely with physical nature, that an emotion has character or features. Take away this world and you are again left with undifferentiated psychical being. Here too it is the world which confers character. In so far as there are features, there is no need for expressing or externalising or projecting, since they are already external, i.e., in the world. In so far as we are dealing with what is merely internal, psychical or soul, no externalisation is possible.

Once make the division, and place on one side a world stripped of many qualities, and on the other, a mind, and no amount of externalising or projecting of feeling or anything else will clothe it. Æsthetics vitiated by the category of feeling or emotion do start with a thin and starving world and then they have to posit a granary of a mind and a marvellous psychical Army Service Corps to convey the food. But there is no such granary nor such a psychical Corps. Croce does in many places protest vigorously against the division. But at some time he let feeling or emotion insinuate itself into his system and his æsthetic has never received "*τὴν τῶν τοιούτων παθημάτων κάθαρσιν*," the necessary purgation of such feeling.

But in the above argument, I have perhaps raised more controversies than I originally intended. For the present enquiry it is sufficient, and for Æsthetic in general it is more important, to show that in the appreciation of a work of art, there is very little resembling the complex psychological situation called an emotion.

In reading a poem which is said to express the feeling of love, it will be admitted that, in, through or while reading, I am not in love with anyone. It would even be insisted that in so far as such a poem were impressed as stimulus or memorial into the service of some actual passion, such

ministration could have no more artistic significance than a woman's treasured scrawl or cherished handkerchief. But if I am not in love, if I have not the feeling of love, who has it and where is it? In what sense can that which is supposed to be expressed, be called a feeling? Similarly, whatever tragedy has to do with pity and terror, it does not really fill us with pity for the actors, nor for "Hecuba" who regarded as a person has never been anything to us and who in any case is dead; above all, a tragedy does not really frighten us. But then where are these emotions of pity and terror?

The æsthetic contemplation is never an emotional cataclysm. If it were, if some critics' orgiastic descriptions of the alleged emotional effects of certain works of art were literally true, we should grow old, explode or have a nervous breakdown in a single æsthetic experience. To guard against the misleading suggestions of the terms emotion and feeling, the Olympian calm, the tranquillising and cathartic effect of art, has been insisted on by the traditional theory of the practical disinterestedness of art, of its detachment from all concern, interest, disturbance, fear or desire, that is, the detachment from all that may in any legitimate sense be called emotion or feeling. This feature has been emphasised anew by Dr. Bullough's "Theory of 'Psychical Distance'" (*British Journal of Psychology*, vol. v., pp. 87-118).

The history of Æsthetic from Plato downwards, is the history of a single phenomenon, that of paradox or distorted truth. In it we find happening what always happens when you start with a confused or inappropriate category. The category has to be supplemented or corrected by nullifying epithets, *contradictiones in adjecto*, paradoxes. Such a paradox is the statement that music expresses feelings or emotions which no one can have. An emotion is something that some person has. It is a motion, a disturbance, a concernment, an interest. It is personal; that is to say it is part and parcel of a context that makes up a person's history or his interests. Such is my joy or sorrow and disappointment, though it be joy in the triumph of an ideal, disappointment in the hold over humanity of the commonplace, and sorrow at the devastating effects on Æsthetic of the term emotion. An emotion, I think, must be all these. But we find that what Æsthetic deals with is an emotion which is no emotion, a disturbance which is no disturbance, a disinterested interest, an impersonal concernment, an affection which has a ghostly and immaterial



vitality and is yet more intense and more real than any other affection. Beauty is passionless passion (F. Thompson). The emotion which art awakens is sterile (O. Wilde, *Critic as Artist*). All bad poetry springs from genuine feeling (*id.*, *Decay of Lying*). "Unreal" and "apparent" are the epithets ascribed to the "æsthetic feelings," to the joy, fear, sorrow and desire which a work of art is supposed to arouse in us, to distinguish them from the real emotions which we have in life. Such feelings are also said to be ideal, universalised, impersonal, immaterial, purified, selfless (S. H. Butcher, *Aristotle's Theory of Poetry*, c. vi.). But though dubbed "unreal and apparent" these same emotions are by others and sometimes by the same people, said to be more real, more intense, richer and more vital than real feelings.

Croce says that art is the expression of feeling, and whatever is beautiful, is beautiful because and in so far as it can express anyone's feelings for him. What is expressed are states of mind, crude emotionality, appetite, propensity and will, that is to say one of the infinite gradations of the practical activity with its moments of pain and pleasure, a state of our own passions, what as individuals we experience, suffer or desire, our affections, our will. But he also maintains that the æsthetic activity itself is not feeling but pure contemplation or intuition (*Estetica*, *Quinta Ediz.*, Bari, 1922, *passim*, and especially c. x.). Feelings, impulses, emotions, as the matter not yet formed by intuition, are merely something postulated for the convenience of exposition while actually non-existent (*ib.*, p. 14). Objectified, intuited, or expressed feelings are not troubling or agitating like those in real life (*ib.*, p. 90). He is definite enough on the point that feeling is the Practical Spirit, that it *is* personal, connected with action, disturbance, practical commotion. "Feeling, action, volition as such, always assume the form of *particularity* or, as it is said, of *passion*" (*Nuovi Saggi*, p. 155).<sup>1</sup> Nevertheless he says that artists who allow the shouts and howls of their passion to penetrate into their representation are bad artists (*ib.*, 127). Real art is marked by practical disinterestedness (129). It is only in our youth that we like passionate arts, exuberant and muddy, in which abound immediate practical expressions of love, rebellion, patriotism, etc. (132). Modern defective literature is confessional, abounding in personal, particular, practical, autobiographic motives and hence the great number of women

<sup>1</sup> For the discrepancy between the particular and personal suggested by "feeling" and the universality of art see especially "Il Carattere di Totalità" in *Nuovi Saggi*.

writers (133 ff.). Art does not consist *nella emotività sentimentale*. It is the overcoming of life lived, of the life of howling passions, by virtue of contemplation or intuition which rules over them and is substituted for them. In poetry we are not to look for material commotions. Poetry is either short of or above practical commotion (267). The critic must discuss the state of mind not of the artist *qua* man (e.g., his love affairs) but that state of mind expressed in the work of art, the inspiration or lyrical motive (272).

Is this, we may ask, really "convenient exposition"? Is that contemplation, expression or intuition, which is also annihilation, transformation or substitution? Can you in one part or in a part of a part of your philosophy, treat something as non-existent and as postulated merely for the convenience or inconvenience of exposition, when in other parts you take it seriously enough? Should you when looking forward to your work of art imply by the term "expression" that there is an entity, "matter" indeed, but yet with a being and nature of its own waiting to be expressed, and then when looking back from your work of art assert that there never was such an antecedent entity? Croce most vigorously protests against creating the dualism of the psychologist's mind and the physicist's nature and he points out that by doing this we make an unbridgeable gap between signs or symbols and the feelings which are to be copied or symbolised, between content and form (*Nuovi Saggi*, p. 271). But unfortunately it is he himself who brings about this dualism by talking of feelings on the one hand, which are to be "expressed" by something else on the other hand, something else which is presumably other than feeling, and while, as in the passage just quoted, he denies impartially the reality of both the psychologist's mind and the physicist's nature, in other passages he denies merely the reality of the latter and asserts that only feelings, volitions, states of mind, thoughts are real (*ib.*, p. 154). But then, if a mountain, as being physical or external nature, is not real, how can we talk as Croce does, of a state of mind or feeling, which is real, being expressed by the unreal mountain? For if the mountain is to "express" feeling, it cannot be feeling itself and must therefore be unreal. And the unreal cannot express the real or do anything. Even if we are willing to accept the whole of Croce's system, yet within that system itself the theory of the expression of feeling creates an irresolvable discrepancy. For according to this theory, feeling, emotivity, i.e., the Practical Spirit, is the matter, the basis and therefore the presupposition of Intuition. But in the

system, Intuition is the very first degree of the Spirit. It is thinkable as independent of the will or the Practical Spirit. The latter presupposes it. How then can the Intuition presuppose the Practical Spirit? (*Est.*, c. vi. ; *Pratica*, *Terza Ed.*, *Bari*, 1923, p. 21).

We must conclude then that the idea of an emotion which always is and is not an emotion, which now has a supernal, now a shadowy reality of the nether world, which now is particular and finite, now universal, which in being contemplated is also transformed, is no very promising instrument of thought. Such an emotion is no emotion. We must leave it to paradox-mongers. Art does not "express" anything; the term "expression" is unintelligible or misleading. Works of art do not essentially convey or arouse emotions. We do not "sicken with the same maladies as the poets," and the singer does not "lend us his pain." He has no pain to lend. In a psychological enquiry it has been observed that if singers really felt the emotions they are supposed to feel or to make us feel, they would not be able to sing.

Of course I do not mean that the æsthetic apprehension is a colourless act. It has its pleasure intense and deep; so has philosophising. But no one means that the art or the artist "expresses" the pleasure *we* have in the contemplation. Therefore it has not been necessary to discuss this. In fact whenever anyone has bethought himself of this undeniable pleasure in all cases of æsthetic contemplation, another hopeless perplexity has arisen. How can the singer give us pleasure by lending us his pain? How can we take pleasure in a tragedy when it inspires us with pity and terror? This has been a secular problem. Some solutions of it are moralistic. We rejoice because we are assured of the ultimate triumph of the goodness or greatness of humanity or of the spirit, through suffering and evil. We rejoice in "the violent self-restitution of the divided spiritual unity" (Prof. Bradley, *Oxf. Lectures*, pp. 90 and 91). But the pleasure of æsthetic apprehension is no more essentially ethical than that of philosophy or mathematics. Opposed to this, though still moralistic, is Schopenhauer's solution which is practically that the pleasure of tragedy consists in finding a confirmation of Schopenhauer's pessimistic philosophy. Other answers on the other hand have been immoral. We are glad because the singer only lends us his pain, and that really it is his and not ours. It is pleasant to reflect that it is the people in the tragedy who are suffering and that but for God's grace, we might have been in their place. This is the "suave mari magno" theory. It is puerile. For us who find

only the pleasure of æsthetic contemplation, and nothing else of emotion that has any relevance or significance, no pain, pity or terror, the problem does not arise.

The æsthetics of feeling do however direct us to three significant points. These we must now scrutinise.

In the first place these theories do justice to a level of æsthetic experience which may justifiably be called abstract, demotic or exoteric, if it is to be regarded as æsthetic at all. We all may sometimes, and some do always, get emotions such as love, or pity, joy or sorrow from certain arts. But not from all; it would be regarded as exaggeration or affectation to claim that an arabesque, a vase or a building, made us experience any such emotions. But such arts as literature, painting and sculpture, have a subsidiary aspect or stratum of representation. Regarded abstractly, they are copies or imitations of a world of things, men and women; and in "the moment of æsthetic illusion," we have through them such a world confronting us. Then, no doubt, we may sympathise, rejoice and sorrow with, hate or love, the characters of a drama or novel, or even perhaps the figures in marble or in a picture. Now, the more elementary our æsthetic taste, the more we remain at this abstract or demotic level of appreciation of art. A popular audience will hiss the villain and applaud the hero of a play, or warn him of approaching danger, and a case is even recorded of money being thrown on the stage to help the hero in his destitution. People of such taste have real likes and dislikes, real feelings towards the characters of a play or novel; pictures and statues are to them pretty or charming women and dear little children. The art catering for such taste, the ordinary run of novels and plays, the cinema, photographic pictures and statues, aims at producing a world of things, men and women, as far as possible. It is more "realistic" than high art can ever be. It does, especially where the artists are intelligent, present us with a world which we must acknowledge as familiar; we may think it silly and commonplace; but it is familiar and it is a world of men and women, while high art always produces some transcendence or transfiguration which makes us hesitate to say that we have before us a world of men and women, or anything familiar. Where we have this imitation of real life or something that is practically accepted as real life, we have also real feeling. But be it noted that in this case there happens what always happens when there is real feeling. It is not every feeling that we enjoy having; we do not like to be disappointed, to be repelled or be really sorrowful. Hence the villain must never be quite a villain,

or at any rate he must be punished; the hero on the other hand should never really suffer or at any rate he must be rewarded; above all, there must never be a really unhappy ending. A statue also should never be naked; for the sexual emotion in this case is as real and disturbing as any other.

It was because Plato fixed on the imitative aspect of art in the *Republic*, that he also emphasised its evil emotional effects, and hemmed it in with such strict regulations. No doubt Plato himself knew well enough what to appreciate in art; but he was legislating not for himself but for a people, for a demotic appreciation of a possibly demotic art.

The æsthetics of feeling do justice to such an appreciation and to such art. But is this real art and really æsthetic appreciation?

The above remarks may have an air of facile insolence. Great critics have always spoken of the characters in great works of art as their most intimate friends for whom they had the closest feeling. Have we not all sorrowed with Dido, detested Æneas, and rejoiced when Dido in the nether world left him "saying many things"? Is this demotic? Perhaps not; but it is certainly an abstract or partial appreciation. We can always treat literature as a stage for characters, just as we can always use it to study the customs of an age, or just as we can always draw from it wise maxims. To give us characters or wise maxims is not however the main import of literature as art. Representation is one of its subsidiary aspects; but it is not otiose. A critic therefore has to examine the subsidiary aspect as well as the main import. To do this, it may help him to speak of his feelings towards characters, to treat them as real persons. He will always guard against misunderstanding by pointing out that in great art these characters are in a way more than mere characters, "symbols" of something transcendent, means through which the artist enables us to apprehend his unique vision of the world. Thus, both Dido and Æneas are means through which we apprehend the pathos and the tearfulness of things. Each is, as it were, an adjective, and as such not a person to be sorrowed with or detested.

Representation, and consequently the emotion which it may involve, can never be considered as the ultimate or real import of any art. For there are arts which fulfil the æsthetic function without representation. If then the æsthetic function is one, representation can only be a means whereby is effected something that can be accomplished without it. It is subsidiary but not irrelevant.

Least of all can we allow that art ever employs any illusion

or make-believe; to enter into its kingdom, we need not become as little children. It is we who bring about the appearance of illusion, by abstracting a partial aspect and taking it for the whole import. We then say that art pretends to be a history or pretends to introduce us to men and women for whom we can have feelings, and that we have to enter into this pretence and game. But by the same method of abstraction, or through ignorance, we might conclude that a hieroglyphic inscription was a collection of funny little pictures intended to amuse us.

Music has no aspect of representation. It however has the peculiarity of acting like a drug, if we let it. The less we attend to it as music, the more passive and lazy we are towards it (*e.g.*, when we are talking or reading or eating), the more drug-like is its operation; it produces a vague and diffuse emotional disturbance, vague benevolence, vague pity, vague sorrow, vague eroticism. We are then benevolent, commiserating, lachrymose or erotic to whatsoever human being is at hand who will let us be these things. But such emotion is always vague; it never is what it ought to be if what music "expresses" is feeling, and if the listener is to have this feeling. Music is said to "express" tempestuous passion, overwhelming grief, translating joy, something cataclysmic always. But who in listening to music, is ever overcome by a tempest of passion, by overwhelming grief or ecstasy of joy? Could he remain in the concert room if he were? As soon as we attend to the music as music, all vague benevolence, sorrow, pity, eroticism, vanish; neither is there any impossible hyperbolic passion, grief, or joy, except in the rhetoric of criticism. There is instead, not a mere state, not mere psychical being, but a keen and absorbing apprehension and with it the intellectual pleasure of apprehension, intense, sharp, lucid, definite. It is interesting in this connexion to cite a personal observation of the art-critic, Mr. Clive Bell. Pictures, which he says he can appreciate properly, he does not value for their representation; nor do they inspire him with any emotion other than the pleasure of æsthetic interest and apprehension. Music however, especially when he cannot grasp it, does inspire him with vague benevolence, pity, sorrow or joy. Here he defers to the taste of his more musically-trained friends.

In this case too, the emotional, orgiastic or "Dionysiac" appreciation is demotic. Plato in the *Republic* has much to say about the dangerous emotional effects of music and the necessity for legislative restrictions.

The other point to which the *Æsthetics* of feeling draw our attention is this. The psychological situation which is an emotion, we have seen to be characterised by three modes of contact with the world: directions of the will, judgment, and apprehension of unattached quality. A man in anger "sees red"; in sorrow he sees black; in love, radiance. It is not any particular thing, but everything, that is seen black or radiant. Or rather qualities are apprehended not as belonging to this or that particular thing, but as being in the world or as being the world. Now according to us, the *æsthetic* apprehension is essentially the pure apprehension of pure quality, *i.e.*, of quality not attached to this or that particular thing. But before we come to developed *æsthetic* apprehension in art, this apprehension of unattached quality is probably not to be met with elsewhere than in emotion. For sensations, unless it be some vague organic sensations, we probably do not have except in perception; and in perception qualities are attached to particular things. Consequently the *æsthetic* apprehension in art may be considered as more particularly the development of one aspect or element of the psychological situation which is an emotion. But it is to be noted that as long as the situation is one of disturbance or commotion, there is very little apprehension and very little definite quality apprehended. Thus in a storm at sea, if I am really frightened, I do not appreciate or realise the storm as splendour and terror. In so far however as I do appreciate and realise the splendour and terror, the emotion of fright is not present. Hence the theory that art is emotion has been modified by saying that "poetry is emotion recollected in tranquillity". It is also to be noticed that if our analysis of emotion is correct, the artistic apprehension would be the development of what is already apprehension and the clarification of what is already quality, an object apprehended as "external," as being in the world. It would not be the expression, externalisation or projection, of the internal, of the subjectively subjective or of psychical being, which by itself is featureless and cannot be externalised or projected.

Thirdly the *Æsthetics* of feeling emphasise the fact that a world which contains qualities like weirdness, calm, mysteriousness, splendour, majesty, must contain the "things" of which psychology treats as well as those with which physical science deals. That is of course a fact. But it is not obvious on the surface nor necessarily implied in the mere act of attributing these qualities. When I say the mountain is stately or majestic, I am performing the same act of attribution as when I say the leaf is green. Neither



in the one case nor in the other, am I implying, reflecting or stating that my feeling or my state of mind affects the thing, or that the thing affects my state of mind.

With this we may leave feeling or emotion.

*The Æsthetic Whole is Quality.*

When I say then that with the help of a work of art we apprehend quality, I mean in the first place that the import of the æsthetic situation is that there is apprehension and an apprehended entity, and not a mere state of mind or psychical disturbance. This much in fact is what is pointed to by the terms externalisation, expression, objectification, objectified feeling. Secondly, it is admitted that works of art "express" or, as I prefer to put it, through them we apprehend, entities that are denoted by words like freshness, serenity, calm, majesty, splendour, weirdness, mysteriousness, vitality, etc. Thirdly, that these words stand for qualities just as do red, green, hard, loud, sweet, etc., we may gather from "common sense," or rather, from the metaphysic embedded in all language.

But we may reach the same conclusion by an independent line of enquiry, if we ask what is meant by æsthetic unity or the unity of an "æsthetic whole," and endeavour to distinguish this from the unity of a point, thing, person, organism, collection, society, system or universal. The æsthetic whole is a whole of quality or in short it is one quality, just as this green is. This is obvious enough in the case of painting and music. For here, and perhaps also in the case of poetry, but not in exactly the same sense, the æsthetic whole must be admitted to be colour and sound, whatever else it may be in addition. It is a whole, and colour and sound are qualities; therefore it is a whole of quality, or in short it is one quality. (The quality, however, it should be noted, need not be "sensed," but merely apprehended in the way in which a musician apprehends his own compositions either before or while putting them down on the score, in the sole way in which the deaf Beethoven could apprehend his own music.)

When we talk of colours or sounds in harmony, or orchestration, fusion, or as being blended or standing in contrast (a word which on a previous occasion I myself used mysteriously) what else do we mean but that we have one quality or a continuum of quality, and that when this harmony is absent, we are aware of many qualities with gaps or relations in between? We mean also that just as we can analyse



green, or white, or cold white, so we can analyse this continuum. Then we seem to have elements or qualities standing in a relation. But then the relation seems to be quality itself and not a "gap" or a relation. That is the case at any rate where we are dealing with a real æsthetic whole.

Æsthetic wholes in other cases, we need not inspect separately; we can proceed by the Aristotelian method of collecting *τα λέγόμενα*.

An æsthetic whole is always said to be non-relational both internally and externally. Hence in fact the term feeling. Of course, after it has been apprehended as itself, we can, like any quality, analyse it into elements and also relate it to another. Thus we can divide a tragedy into parts, the beginning, middle and end, and say these are related to each other. We can also trace its "sources" and compare it with other plays and we can philosophise about it. But we do not do this, while apprehending it as itself; we do not stop the actors in order to write a poetics or a history of tragedy. All such knowledge or activity must remain in abeyance, if we wish to contemplate the drama as itself. Considered in itself, an æsthetic whole as apprehended, just like a simple quality, presents a non-relational internal constitution. As in the case of a simple quality also, its being is indifferent to external relations, and the knowledge of such relations does not constitute but presupposes knowledge of its being, just as we have seen that the knowledge of similarity, difference, and adherence to a thing does not constitute the knowledge of "this green" as "this green".

An æsthetic whole, like a simple quality, is an entity to which you cannot add and from which you cannot take away anything without effecting a substitution.

Like any quality, an æsthetic whole is an independent, complete, self-subsistent individual. It is a closed universe; it is significant that *κόσμος* is primarily an æsthetic term. We can realise best what is meant by a separate universe, if we think of the intrusion of a sound from outside the concert-room, on our apprehension of a piece of music. We have on the one side the universe of music, then a gap, and the other, the intruding sound. We can also see how failure to constitute a separate universe is an æsthetic defect if we think of a tragedy which has no proper beginning, *i.e.*, such that it "does not itself follow anything by causal necessity," but is really *ἔξω τῆς τραγῳδίας*.

The same thing is meant by attributing "perfection" or *τελειότης* to an æsthetic whole or by saying that beauty is perfection. This word, it is true, is generally of the nature of

a mystery, an ultima ratio, or term of refuge. But in all discussions in which it occurs, unless they are obviously marred by weakness of speculative insight or imperfect æsthetic experience, "perfection" is obviously not intended to convey ethical approval. It is not meant that the æsthetic whole is "good"; nor that it is perfect in the sense in which a watch and an axe are perfect, because they work well; nor that what is good or efficient, is *qua* good or efficient, an æsthetic whole, though it may be denoted by the then philosophically useless and meaningless word "beautiful". An æsthetic whole, then, is perfect only in the way in which this green is perfect; it is a complete, self-subsistent universe.

*The Æsthetic Apprehension is not Judgment.*

The identification of the æsthetic whole with quality can be reached also by considering the apprehension of the æsthetic whole. As in the case of quality, so here, we have apprehension which is not judgment. This is obvious as regards music. A musical composition is not a statement; it is not history nor a scientific or philosophical theory. Judgments such as: "it is by Chopin" or "it is beautiful" or "it resembles a piece of Chaikovsky's," do not constitute knowledge or apprehension of the music itself nor do they lead to it. Apprehension of the music, on the other hand, is not equivalent to any judgment. Moreover, that the æsthetic whole may become the subject of a judgment, it must already be known or apprehended. And such judgments, *e.g.*, "the piece is beautiful" or "it is music," constitute knowledge not of the piece but of "music" or "the beautiful". In these, as we have already remarked when discussing quality, the predicate is the real subject.

What applies to music, applies equally to all arts which do not employ representation. But in the case of the pictorial and plastic arts it might seem as if we had, not indeed judgment or statement, but at any rate something equivalent to a judgment claim, to the claim that "this is Pericles," or "this is a man" or "this is a carpenter". But such a claim, or the representational or mimetic significance, we cannot allow to be the main, full, or real import of these arts, if only for the reason that there are arts which do not employ representation. Otherwise, we shall have to drive out the painter from our Republic for daring to claim that this is a carpenter; also we shall want to know why we are to waste our time on these effigies, when we can look at the live carpenter, or man himself. And if we admire clever trickery and want illusion or

copying, a wax figure which Ruskin admits to be more admirable in this respect, will serve better; so will a photograph. We can only do justice to the value we attribute to these arts, by saying that by means of what may with certain limitations be called representation or imitation, they give us what we cannot find either in the wax figure or photograph or the carpenter himself, namely "feeling," or the artist's soul, and that this is their main import. What truth is contained in the words "feeling" and "soul," I hope to take up in the word "quality". Here too the essential apprehension then is of quality, *i.e.*, it is not judgment.

As regards literature,<sup>1</sup> it would be admitted that the import of a poem is not that of statement or judgment, in the sense that a poem is neither history, nor science, nor philosophy. It might, however, be objected that it is made up of propositions just as is any scientific book. We must say that these propositions, not having the import of judgment, are not judgments.

For a poem as a whole is often merely an exclamation or a prayer, and whatever we may think of it as a suggestion for a convenient technique, the theory of so-called futuristic poetry has seized on a fundamental principle in trying to write all poetry in the form of exclamations. We can say of all poetry that it is always like an exclamation, in this respect at any rate, that you can never argue with it or respond to its import with "Yes" or "No": you do not treat it as judgment.

A book of science, history or philosophy is made up of many propositions or judgments which may together be regarded as constituting or as explicating one judgment. Thus the many propositions making up Mr. B. Russell's *Analysis of Mind* may be said to constitute, explicate or be *in extenso*, the judgment: "Mind is not essentially different from matter". In this sense then the whole book is judgment or its whole import is that of judgment. But I cannot say that the propositions making up the *Iliad* constitute any one judgment as, *e.g.*, "the wrath of Achilles was detrimental to the Greeks". Nor can I say that Shakespeare's "Macbeth" is an expansion of the judgment "murder will out" or "La Belle Dame Sans Merci" of the judgment "beautiful women are cruel". The import of a poem can never be given in any proposition which really signifies judgment. That is not due merely to the difficulty of epitomising. It is difficult and

<sup>1</sup> This question I have treated at some length in *MIND*, N.S., Nos. 119 and 120, "Literary Truth and Realism".

useless enough to epitomise in one proposition a volume of philosophy. But we can see what is meant by saying that the proposition can give us the import of the volume of philosophy, while it cannot give us the import of a poem. To epitomise in the latter case we have to invent, not a concise proposition, but a concise phrase such as "bright speed," "silvery etheriality," denoting a quality.

A poem, it is true, may hold in itself precipitated philosophy, history or even science, in the way in which elements are synthesised in any quality, or as we may conceive the Monna Lisa to contain "the animalism of Greece, the lust of Rome, the mysticism of the middle age." In our analysis we may draw out in explicit judgment this philosophy, psychology or history. Thus we may write about the religious philosophy of Æschylus, the pantheism of Shelley, Wordsworth's philosophy of nature. But it is clear that in apprehending the poetry as poetry we do not apprehend any philosophy as such, or as judgment. Moreover, were the poem to be merely this philosophy as philosophy, we should not value it as poetry. Also within very wide limits this philosophy or judgment may be false or worthless without impairing the poetry. Thus we need not accept Æschylus' religious tenets, Milton's theology or Tennyson's political opinions in order to appreciate their poetry in so far as it is really poetry. It follows then that what we value in poetry is something else. The real import of a poem is not judgment. This becomes clear in cases such as that of didactic poetry where the aspect of judgment looms too large and is too independent to allow us to say that it is precipitated or subsumed. In that case there is really conflict. If we want philosophy, we damn Lucretius and Plato for distracting us with their poetry; if on the other hand we want poetry, we resent the philosophy. Here the aspect of poetry and that of judgment are distinct.

We may say then that the real import of poetry is not the judgment we may extricate from it. We have seen that its import is not judgment in any sense.

Our conclusion is, then, that the apprehension of all æsthetic wholes is like that of quality, knowledge which is not judgment. We are now justified in identifying æsthetic wholes with qualities and in saying that through art we apprehend qualities.

#### *Main Import and Subsidiary Aspects.*

In reaching this conclusion, I have several times made use of the phrase, "main, full, or real import"; I shall probably

use it again. Lest it become a mystery, an ultima ratio, or mere term of refuge, we must examine it. When I am reading a book dealing, let us say, with the laws of motion, I can say that the main or real import of the book is that it makes the laws of motion manifest; the import of my act or of the whole situation, is that I apprehend the laws of motion. Of the book, I can also say that it is written in good English, or that it makes use of vivid metaphors; but its making use of metaphors or its being written in good English are aspects of it subsidiary to its main import, the making manifest of the laws of motion. The apprehension or the situation also holds subsidiary aspects: sensing and perceiving (*e.g.*, hearing the ticking of the clock, noticing the print), appreciating the metaphors, following the grammatical construction of the sentences. These and many more aspects may be there; some of them obviously must be there; how else could I in this case apprehend the laws of motion, but by perceiving the print, obtaining illumination from the metaphors, and understanding the grammar? Each may become prominent enough, when the proper equilibrium of the situation is disturbed, as, for example, when the clock stops ticking, when there is something wrong with the print, when a metaphor is grotesque, or when the grammar is barbarous. But as a subsidiary element of the situation, each is different from what it would be if it were the main import of the situation and the rest were subsidiary, *e.g.*, if I were specially attending to the ticking of the clock, if I were attending to the print as a proof-reader, or to the grammar for the purposes of parsing and analysis. It would therefore be a wrong or abstract account of the situation, "apprehension of the laws of motion," to fix on any of these aspects as the main import. It would also be wrong to imply that they are all present either as a mere collection or as a succession, or that the main import, the apprehension of the laws of motion, is another aspect co-ordinate with all these. These must rather be said to be aspects of it, its elements, strata, or dimensions. Using a phrase we have already explained, we might say that it resumes them as its history were it not for the fact that the main import is not subsequent to any of these, as it is to its history. We must say then that it envelops them, or that it is the unity of them and that every act of apprehension or any situation of the mind is a unity of elements or aspects such that in it, each of these loses the nature it would have, if it were uppermost. This of course aims merely at being an adequate description and not an explanation. We should have an attempt at explanation if we said that some of these

elements, *e.g.*, hearing the ticking of the clock, are unconscious acts of consciousness; but this would be an oxymoron, not an explanation.

The distinction here made runs throughout my argument. With its help I would maintain that it may be in a certain sense the duty of a poet to satisfy the demands of judgment, *i.e.*, to give an imitation of a world of men and things possessing a certain verisimilitude, even to satisfy our ethical demands. But this duty is really negative. In so far as he must use representation, in so far as he does challenge us as a preacher, he must not shock us. The ethical activity and that of judgment need only be satisfied in the sense that they must be allowed to remain quiescent in the equilibrium of the whole æsthetic situation, the real import of which is the apprehension of quality. In the same way, I must avoid using obscene language or poetical phrases, shocking people's moral susceptibilities, or making false historical statements, in order to preserve the main import of the present enquiry.

With the help of the same distinction, I would maintain even more emphatically, that it is abstraction or exaggeration to fix on the imitative aspect of any art as final and to treat as relevant any emotion which may be incidental to the representation.

I appeal to that distinction, when I say that before we come to art, that is, in any situation the main import of which is judgment, *i.e.*, perception, historical, ethical, scientific or philosophic judgments, or action, or emotional disturbance, the apprehension of quality, being always a merely subsidiary aspect, is not pure apprehension of pure quality.

When, however, we do come to art, in the artistic situation, the apprehension of quality is the main import and everything else is subsidiary.

### *Qualities are Unattached or Floating.*

By pure apprehension of pure quality, I mean the apprehension of quality unattached, of quality which is not the attribute of anything; the qualities we apprehend are qualities of nothing.

In stating this, I am really saying exactly the same thing, as when I argued that the æsthetic apprehension is not judgment. For to maintain that art gives us the quality of this or that thing, of this man or of a class of men, would be to hold that art describes objects, *i.e.*, that its import is judgment. For what else but judgment is description, and has not philosophy itself rightly been called description?

Nevertheless, though I could quote every critic almost to support the statement that art gives us quality (a statement which taken by itself is indeed a vapid truism), any quotation almost would, in appearance at any rate, contradict the contention that the given quality is not the quality of anything in particular. Thus Mr. A. C. Benson tells us that "to deal with life in an artistic spirit, one should aim at the perception of quality". But then the quality is apparently always the attribute of something, "the quality of action, the quality of thoughts, the quality of character". So it would be said that the artist gives us the quality of flowers, of birds, of streams, of mountains, of a storm, always of something either a particular or a class of particulars. Even Croce to whom "things" are abominations of perception and who, no doubt, does not mean what he appears to mean, says that the æsthetic intuition is a category or function which gives the knowledge of THINGS in their individual physiognomy, ("che dà la conoscenza delle cose nella loro fisionomia individuale," *Est.*, p. 8). Now that pure qualities or qualities purely apprehended, *i.e.*, by the æsthetic apprehension, are free or floating qualities, not qualities *of* anything, is the pivot on which the whole of this enquiry turns. Therefore, though I have already argued this by implication, it will be necessary, because of the importance of the point, to make it explicit and to repeat the argument in a different form.

Music, at any rate, it will be allowed, is not a description of anything. The quality I apprehend through a piece of music, I do not apprehend as belonging to anything. It does not presumably belong to the musical instrument. It does not belong to the sound; for the sound is what the quality is; the quality is serene or gloomy sound or resonant serenity, resonant gloom. We are often told indeed that a certain piece of music gives us the quality or the spirit of spring, or of the English or Slavonic peoples. But this is merely a convenient way of classifying the quality, just as we classify this green by saying it is a colour; we do not mean that colour is something to which the green belongs. Again, the "thing" to which the quality is referred is always a large "thing" like spring, or the English people. The quality is obviously not supposed to belong, be attached, to or form part of this "thing"; rather it is conceived to be immanent in it like a "spirit" (the word most often used) and like an immanent spirit or deity to be both the whole thing which it informs and something more. This point is very significant. Lastly, in music at any rate, such reference or specification is never taken very seriously. It is not



suggested that enjoying the spring, talking to Englishmen, or studying the Slavonic people, is an adequate substitute for listening to the music; nor are we referred to these things for verification of the music. In the end (though as we shall see, there is really more in it than this) what is meant is that to understand the English people, we must study its music as well as everything else which it has done or produced.

What applies to music applies to the other non-representational arts also. For the æsthetic apprehension all that presents itself of a temple, for example, is the æsthetic whole, or a quality: solemnity, majesty, calm. The aspects of the building as a "thing," as something on which you can climb or which you can blow up with dynamite, are not present. Hence in the moment of æsthetic apprehension there is no "thing" to which the quality can be attached. This will come up again, later, when we consider "æsthetic semblance".

That all this holds true of the plastic and pictorial arts also, there is no difficulty in admitting, once we refuse to identify their real import with their subsidiary aspect of mimesis or representation. If we regard the Monna Lisa as a quality, colour, which holds within it "the animalism of Greece, the lust of Rome, the mysticism of the Middle Age, the sins of the Borgias, . . . all thoughts and experience of the world," then we obviously have not before us either a woman, or the portrait of a woman, or the quality or attribute of any one thing. The quality is a floating quality. It is precisely the impossibility of assigning any quality apprehended through art, to any one thing or any one section of the world, that is indicated by saying with Ruskin that the artist's imagination "busies itself throughout in expressing occult and far-sought sympathies in every detail," and that "Tintoret gives a shadow meaning and oracular voice," or with W. Pater, that all the motives, all the interests and effects of a long history condense themselves into a mere gesture, look or smile.

In the case of poetry, I said that with the help of the words—

voice . . . heard  
In spring-time from the cuckoo-bird  
Breaking the silence of the seas  
Among the farthest Hebrides

I apprehended a certain quality, a silvery etheriality; but I do not apprehend an attribute of the cuckoo or of the spring, though I do not assert that these have nothing to do with



what I apprehend. So with the help of Homer's "meadows by the grey sea's shores, well-watered and soft," I apprehend a certain lusciousness and freshness, but not the lusciousness and freshness of meadows in particular, or any attribute of them. All the words in these quotations we may take as forming a texture of adjectives or one compound adjective, in the same way as "luscious-fresh" or "silvery-etherial". Such a tapestry of adjectives, or such a compound-adjective is Blake's—

O Rose, thou art sick !  
The invisible worm,  
That flies in the night  
In the howling storm,  
Has found out thy bed  
Of crimson joy ;  
And his dark secret love  
Does thy life destroy.

or Poe's—

Helen, thy beauty is to me,  
Like those Nicean barks of yore,  
That gently o'er a perfumed sea,  
The weary way-worn wanderer bore,  
To his own native shore.

or Keats' "La Belle Dame sans Merci" or Coleridge's "Kubla Khan" or Shakespeare's "Phoenix and Turtle".

In Blake's poem, it would be absurd to select one word, like the "rose," or one part, and say the rest is adjectival to it. Every part qualifies every other in the same way as the parts of a compound adjective, *e.g.*, "luscious-fresh" qualify each other, and the whole is one floating adjective through which we apprehend a floating quality, or a quality which is a quality of nothing. The cases I have chosen are cases of admittedly supreme poetry, the excellence of which would seem to be necessarily bound up with our inability to say "what the poetry is about". That does not mean, however, that it is unintelligible or that it is meaningless though beautiful sound. It means merely that we are not tempted to take part of it as subject and the rest as predicate "about" the subject. There is no distinction between a "that" and a "what". In short we have apprehension of quality and quality only, or of unattached, floating quality, and not of quality and something to which it belongs. That is the fact pointed to by saying that in some literature, it is difficult to distinguish between "matter" or "subject" and "form". So Walter Pater says "the very perfection of such poetry often appears to depend, in part, on a certain suppression or vagueness of mere subject". But if we have grasped our principle aright, we can say

that this is not a question of more or less, of appearing, or of some poetry only. All poetry and all literature is such, that, taken in its real import, we cannot say that it is "about" anything; for it is not judgment and therefore it does not present the distinction between a "that" and a "what," or subject and predicate. Every poem and every literary work is a floating adjective. Thus the "Agamemnon" is a tapestry of adjectives; so is "Hamlet"; and Agamemnon and Clytæmnestra, Hamlet, Ophelia and the rest are adjectival strands in these tapestries. That is of course in so far as these works are architectonic or really æsthetic wholes. And if they are, it is misleading to talk even of adjectival strands, unless we recognise that we are analysing.

The above argument may receive support from a consideration of the difficulty of writing good poetry or good literature on a set subject, *e.g.*, "The War". In so far as we have art, it soars away from the subject which as a "set subject" disappears; in so far as the poet keeps to the subject, he produces merely description, history, or philosophy. So a portrait which is also high art, contains, we say, more of the artist or what he has to bring, than of the original. The difficulty in question is not psychological. It is not that the artist is capricious or lazy. Nor is it that nothing is good enough for him and he must ennoble everything; for if the word has an ethical signification, art does not "ennoble" anything. Nor is it very enlightening to say that the artist sees "things" differently from other people; he does not see "things" at all. The difficulty is ultimate. The æsthetic apprehension is apprehension of quality only and not of quality plus something to which it belongs, just as sensing green is *qua* sensing, the apprehension of green only, and not the apprehension of a green thing.

Let us ask what is involved in saying that a book of description, or science, or history is "about" something, or gives us the nature or character of something. Such a book is judgment and judgment, as we said at the beginning, is the apprehension of entities that can be apprehended by their parts and that are tainted or fringed with infinity; it is the apprehension of sections of an infinite. Such a book supplements our partial apprehension of such an entity or section by giving us a new part, by attaching to it a predicate. In this sense it is "about" a subject, a subject apprehended in part, elsewhere, outside the book. Hence the latter is never self-contained; it must always refer us outwards, to other books, to other apprehension; it forms part of a larger context to which both its beginning and its end

point; in fact it has not properly either a beginning or end in the same way as a tragedy has. Its interest depends upon questions asked and answers given elsewhere; the dwelling in it is a continual excursion from it, and such excursion essentially constitutes the apprehension. But it is not so with the æsthetic apprehension; the latter is an absorption; it is complete and self-contained; it is marked by repose and finality. It has these characteristics because what is apprehended is, as we have said, a complete self-subsistent universe. We do not come to a poem with questions, and its interest does not depend on answers given elsewhere; the asking of any questions does not constitute the æsthetic apprehension but is on the contrary a fatal break in it. A poem cannot be conceived as elucidating or describing a subject elucidated also elsewhere. Whether the poem be a tragedy or not, it has a proper beginning and end; it is in short an æsthetic whole, a self-subsistent universe, not referring us outside itself. This self-sufficiency and isolation is, I think, the very essence of the æsthetic apprehension and the æsthetic whole. To do justice to it we must maintain that a poem is not "about" anything, that it does not describe, characterise or predicate, that through it we apprehend merely a floating quality and not a section of reality to be attached as predicate to another section.

By clinging to our raft of floating quality we shall escape another terrible Scylla and Charybdis of æsthetics. We are told that art gives us individuality. That is true; each work of art makes us apprehend an individual quality and a quality, we have seen at the beginning, is an individual, complete, self-subsistent, in a way in which no other entity is. But according to us, the only individuality apprehended by means of a work of art is the individuality of the given quality or æsthetic whole itself. Generally, however, it seems to be implied that art gives us the individuality of particular things or sections of reality, of this chair, of Julius Cæsar, of the Russian people, and so on. This is not identical with the statement we have already discussed: That alleged that art gave us an attribute or attributes of a particular; here it is implied that the particular itself is given, and given or grasped as a whole, whereas in ordinary apprehension it is grasped piece-meal only. But can an entity the nature of which is affected by external relations, and which essentially is not an independent whole, be grasped as a complete self-subsistent individual such as is the æsthetic whole? If we hold that a thing or any particular is really such an individual whole, then we must say that it is only the work of judgment which makes it appear not to be

such. If judgment and the æsthetic apprehension are knowledge of the same thing, then either the one or the other must be considered to vitiate the object. But if we do not make them compete, we need reject neither.

Moreover we should have to hold that art gives us always knowledge of this particular man, this particular thing. It is, however, maintained on the contrary that artistic knowledge is always of the universal. In a shallow way this has been taken to mean that the artist gives us only what is typical, what belongs to the species or genus, avoiding all individual traits. More profoundly, art has been said to give us, not the nature of all rivers, of all men, or of all things, but of the whole of the universe.

The two conflicting theories have been combined in the statement that art gives us knowledge of the universal in the individual or the individual which is a universal. If the terms bear their ordinary meaning here, then nothing distinctive is conveyed. For all apprehension of any particular thing must also be apprehension of the universal in it, and all apprehension of the universal must apprehend it as being in individuals. For where else is it? The terms, however, generally bear an unusual sense and would seem to indicate apprehension of an individual which is not indeed a universal, *e.g.*, like the universal of horse, but an universe or the universe, such as is the æsthetic whole.

Finally, the contention that the æsthetic apprehension is of floating quality only, receives confirmation from examining the term "symbol". If, to take an extreme instance, you pick out "rose" or "sick rose" in Blake's poem and try to treat the rest as adjectival of it, or as its predicate, then you must admit that the rose is no ordinary rose. You have to say that it is a "symbolic" rose, something which is a rose and an infinite more, that more being at least the rest of the poem; that is, you have to allow that the poem does not really describe a rose or anything else. But "symbol" is a word which seems to denote one of the ultimate unintelligibles.

The attempt to treat a poem as a description of any particular thing, also breaks down when one is driven to say that the poet gives us this or that thing as seen through his "temperament" or "soul". All judgment, including description, must claim objectivity and therefore freedom from the interference of a "temperament" or "soul". These latter words are terms of refuge, and what they cover we hope to bring out at the end.

We must conclude then that the æsthetic whole, or that which we grasp with the help of a work of art, is quality, and

quality unattached or floating. As such it is apprehended in the moment of æsthetic contemplation, and subsequently also it cannot be attached or attributed to a "thing" or a particular section of the world. If we try to affect such attachment or even if, with all good will, we start with a set subject, with a particular thing or section of reality, and, following the precept of a certain writer, we gaze and gaze at a stone until we seize its inmost essence, its individuality, and find "le mot juste," then, provided we have really got "le mot juste," and not a general word, provided also that we have seized an individuality, we may discover, to our surprise, that the individuality can scarcely be spoken of as the character or nature, or as an attribute, of the stone or any fragment of reality. In relation to any particular, it seems to be like an immanent spirit informing the particular, constituting the whole of it and yet also transcending it, while the particular, somehow, seems to be the husk of the quality. The latter would seem to characterise a particular only in the way in which the universe might be said to characterise its parts. We might even be inclined to speak of it as the "spirit" which with its "plastic stress, sweeps through the dull dense world". Such immanentism is suggestive, but it is not ours; it may appear, not that the quality is immanent in something else, but rather that something else is immanent in it.

The theory of floating quality will help us to touch briefly on three perplexities of æsthetics: æsthetic semblance, natural beauty, the ethical valuation of art.

### *Æsthetic Semblance.*

The æsthetic whole is said to be mere semblance or appearance. These are unfortunate words, as they suggest illusion and unreality. The æsthetic whole, being a quality, is appearance only in the way in which any secondary quality may be termed appearance; that means not that it is unreal, but that there can be no question or dispute about its reality. To prevent misunderstanding, it would be best to give up the term "appearance" and to say that the æsthetic whole, being quality, can only be apprehended or not apprehended; the apprehension of it is not judgment and it cannot involve error.

The æsthetic whole being a quality, has no external relations or commerce with an environment; it is not acted upon nor does it react. Since it is floating quality, it is not the attribute of, it does not belong to, any entity which has such relations with an environment. Thus the æsthetic whole,

which I call "a beautiful landscape," is not something on which you can act by sitting on it, or running about on it, nor does it act on you by causing you to fall or by providing you with fodder. In this sense it is mere appearance.

### *Natural Beauty.*

Thus, we can say both that there is and also that there is not "natural beauty". The æsthetic whole we call a "majestic mountain" is not something on which we can climb or through which we can dig a tunnel and so it is not a natural or physical mountain: nor does it belong to such a mountain, since it does not belong to anything. To admit that there is natural beauty, is merely to admit that, to a certain extent, I can apprehend an æsthetic whole or quality, not only without the help of the art of others but also without creating myself a work of art; but that is only to a certain extent. To a certain extent, we can also apprehend reality by evolving a metaphysical system without writing it down and without inflicting it on our friends.

After this it is scarcely necessary to say that I do not mean that some qualities, still less that some "things!" actions, or persons are æsthetic or beautiful while others are not. All qualities are *αἰσθητά* and all apprehension of quality is æsthetic. Qualities, however, do not belong to particulars, and what belongs to particulars is not properly quality. On the other hand, I do not mean that an æsthetic whole exists in our imagination only. It is in the world or perhaps it is the world.

### *Art and Ethics.*

Since æsthetic wholes or qualities do not do anything, and since we can do nothing to them except admire them, since we have no negotiations with them, we cannot approve or disapprove of them ethically, as we do of persons or their actions. We may condemn the production of works of art or the collection of them as immoral or as waste of time; but it is only through misunderstanding that we can imagine that what we apprehend through a work of art, is good or bad, moral or immoral, any more than the colour green is, or the spatial relations which we apprehend through a work on geometry. The misunderstanding arises through exaggerating the mimetic import of art; for it would scarcely ever be maintained that an arabesque could be immoral. Of course in analysing an æsthetic whole, we may arrive at some element which we can call moral or immoral. Thus the

Monna Lisa may contain the lust of Rome and the sins of the Borgias as Pater says it does; in certain cases we might also support our analysis by pointing to the scoundrelly or immoral life of the artist. But then the elements in a quality lose themselves in it, as do all the colours in white, or ether vibrations in any colour, and so the Monna Lisa as an apprehended quality is not itself the lust of Rome nor the sins of the Borgias.

If the above is true, this should prevent us from disposing of the metaphysical problem of æsthetics by saying that the æsthetic whole, or beauty, is a synthesis which satisfies the demands of feeling. This would seem to mean that it is good. So Mr. MacKenzie (*Outlines of Metaphysics*) tells us that the beautiful and the good both mean what ultimately satisfies the aspirations of a thinking being and they cannot really be distinct. But the æsthetic whole can satisfy aspirations only in the same way as the colour green, or spatial relations can. Here again it is probably the mimetic aspect of art that is misleading; regarded as a representation of a world of men and things, art, and especially literature, may seem to present us with Utopias. But then its excellence does not depend on its doing this. The "Agamemnon" of Æschylus possesses æsthetic excellence; but regarded as a world of men and things it is not a desirable world to live in. Conversely, there may be an actual situation in life which would provide excellent material for a good tragedy; but as an actual situation we would rather that it were not; it does not satisfy any aspirations.

(To be concluded.)

## IV.—DISCUSSION.

### OUR KNOWLEDGE OF THE INFINITE.

IN this brief paper I want to devote myself to an effort to remove a misunderstanding which seems to be working needless mischief as between various groups of philosophers and which so far as I can see is not anything better than a misunderstanding. I refer to the criticism which the idealistic doctrine of infinity has received at the hands of those thinkers who have approached philosophy from the side of mathematical thought. I am not a mathematician; but after much reflection upon what idealistic theory means by the infinite I am unable to see how the objections brought against it are anything except a confirmation of it.

Idealistic thought has been accused of denying the reality of the sensible world; denying the reality of space and of time and so on. And according to Mr. Bertrand Russell—in his book on *Our Perception of the External World*, p. 155—"One of the grounds upon which the reality of the sensible world has been questioned is the supposed impossibility of infinity and continuity".

"But," he tells us, "the physics which assumes infinity and continuity in its explanations is incomparably easier and more natural from a scientific point of view than any other. And there is no longer any reason to struggle against the acceptance of infinity and continuity, since George Cantor has shown that the supposed contradictions in them are illusory."

In other words, idealists had put forth a criticism of what they call infinite series, numerical infinity, the progressus ad infinitum or the regressus ad infinitum, or as they sometimes had the hardihood to call it, bad infinity. To all of which Russell, following Cantor and other masters of speculative mathematical thought, makes objection by saying that an infinite series is not logically repugnant but is quite as logically possible as you want anything to be.

But what had idealism tried to teach in this matter?

To begin with, mathematics is not the place in which it meets with the infinite. The infinite which it wants to understand is met primarily in the sphere of art, morality and religion. There it meets the suggestion of something all-transcending; and, unwilling to take the suggestion as an illusion unless it actually can't be anything real, it asks what kind of a reality it can be; and whether it can possibly be what it seems to be, namely the infinite whole of things welling up in us and speaking to us.



This is the problem as idealistic philosophy seems to encounter it. If this which intimates itself to us in our moments of religious or moral or æsthetic insight as the all-transcending or infinite is to be taken as a reality, what manner of a reality can it possibly be? and how is it related to that finitude which clings to us ourselves and to everything that we can definitely observe or introspect?

And apart altogether from its language, what have actually been its findings in the matter? Apart from the expressions it has used, what has it tried to express? It has always acknowledged, of course, that the infinite whole of things is "a big proposition," as an American might say. But it has not shrunk from it on that account. It has taken its stand on the fact that we have what seems to be a sense for the whole. For instance, we are always striking attitudes towards the whole. We most naturally put interpretations on the whole of things: "I have never seen the righteous forsaken nor his children begging their bread." That is a statement about the government of the universe. It is a characterisation of the whole of things. Or going to the other end of the scale we draw a cartoon of a dog chasing a cat and 'write beneath it the words "Life—just one damn thing after another!"' We sum up things. We cannot help it. It is our nature to do so. Wrong as we almost always are, we still feel we could be right—unless, at least, there proves on inquiry to be something which definitely renders it for ever impossible that we should be. We at least ask questions about the whole. We must, by our constitution. As Kant put it, Human reason is condemned for ever to raise questions which it cannot answer. And what he had in mind were questions regarding the whole of things, questions regarding the infinite. And he thought we could not answer them because of the native limitations of our faculties.

But are there obvious reasons why we can't answer them? Is it self-evident that we can have no knowledge of the infinite? This attitude of Kant's has been more or less the historical occasion of the rise of a philosophy which would fain take another view than his in the matter. This idealism has always wanted to differ from Kant here, and to retort to the allegation that we cannot know the infinite, that that depends. It depends on how we think of knowing it. It would fain point out that for Kant himself there was such a thing as practical knowledge which could do some very wonderful things. This is how, after piercing through all the technicalities, I think one must interpret the idealistic position as regards our knowledge of the infinite. It is quite true that the infinite entirety of the universe is something much bigger, if we must put it so crudely, than we are. But it is unphilosophic to lie down to mere impressions like this; as Pascal himself said—who was very sensitive to these impressions—when he replied to the statement that man was but a reed shaken with the wind, by reminding us that the reed could think; and that therefore it was in some sense "greater" than the whole assembled mass of the

unthinking. And once we acknowledge the existence of this sense for the whole which we have, and sit down to the work of interpreting it, all the advice that idealism has presumed to give us is simply that we should take care, before concluding that we can have no knowledge of the infinite, that we were not falling into, or following, any of the common fallacies which lead astray wherever we follow them. Don't let us assume, it says, that the infinite is related to us either as merely other, that is to say as something merely and utterly different from what we are and know, as, for instance, the thing in itself of Kant is; nor let us on the other hand assume that the infinite is related to us as something merely more. For these are two characteristic roads to failure in every other connexion; and we cannot resign the quest of the infinite merely because we cannot find it along either of these two paths.

They are precisely the two characteristic ways in which we human beings fail of our human objects when we do fail of them, as a very little insight will show us; and this whether our object be a practical one or an object of knowledge.

If we want to advance in knowledge of reality, we are very well aware of the plentitude of our initial ignorance. But we do not literally know nothing. No doubt we may say we know practically nothing compared with what there is to know, but that is a figure of speech. Our mind is not like a bucket which we must empty out before we can begin to fill it with clean water. We do not get to know by literally emptying our minds of everything we already had, and beginning *de novo* with something totally and utterly other than anything which we have ever known.

No doubt when we do at length know, our minds will have hold of multitudes of things-other than we had any idea of in the days of our ignorance. As informed intelligences, we shall be other, or different from what we were as ignorant ones. But we shall not have filled ourselves with something entirely alien. What we have now will still be, in some respect or degree, a development or continuation of what we had before. It will be other; but it will be also what we had—more of what we had.

And yet—it must be other. If it is merely what we had (only more) then we are no further forward. We are familiar enough with this fallacy. It is the fallacy of the man who confounds growth in knowledge with mere amassing of facts.

The mind which is nothing but a memory can acquire heaps of additional things. But it does not understand them; it does not see their bearing on one another; and so the virtue goes out of them. The new facts—the more and more and more facts—are a mere continuation on the one dead level; always more of the same old thing, like the conversation of a bore.

This then is not the relation in which the infinite stands to us either. If, in our search for it, we set out looking for something merely more than we, then we are on a track which, since it leads

to failure everywhere else, must lead to failure here; and none the worse for our knowledge of the infinite.

And this is what Idealism has found in what it has called the mathematical conception of an infinite series; not a false doctrine as to what the infinite is; not a doctrine regarding the infinite which presents the problem at all; but a symbol for one of the wrong paths along which we may be tempted to go out in search of the infinite; as Socrates' unskilful musician in *The Republic* goes out on the wrong path in search of the perfect note, hoping to reach it not by improving on his unlike only but by improving on everybody, his like and his unlike indifferently; or in other words by perpetually screwing and unscrewing with the idea apparently that he has only to go on long enough. That was the one wrong way of getting to a practical object, which Socrates represented: *viz.*, the merely doing harder and harder what you are doing, or doing it longer and longer, without change. There was another wrong road to his practical object that the bad tuner might have taken, however, and which Socrates might have represented. The fallacy hitherto had been to go merely on and on without change. It was abstractly possible that the good man at the end of all his patience should determine of a sudden to make it a case of nothing but change, all change; in other words, that he should throw the thing from him or kick his foot through it. That would have been making a difference. But then, it would be doing something of a sudden merely other; it would be no continuation of his previous efforts. It would not in any way be carrying on; it would only be something different—sheer originality as opposed to mere perseverance. Mere perseverance—the “try try try again” principle—is not much good. But neither is sheer originality with no element of “again” in it. Skill, genuine skill, that which gets the object, is the combination of these things. It is a movement towards an other, but an other which is also more; it is a movement towards a more, but a more which is also other. And if we assume this relation of the infinite to us, there are at any rate not those two reasons for concluding that it is hopelessly beyond us. And what idealism has seen in the mathematical conception, as I have said, is a version of the relation between the whole and us; and it has said that it is not an intelligible version of that relation.

This is the idealist's criticism of infinite series. And when the mathematician, not being specially interested in any such object as reality as a whole, comes now and points out that the conception of an infinite series or at least of an infinite class is perfectly intelligible, it is incumbent on the philosopher to suspend reference to mathematical series, and continue to try to make his points in other terms, as I have been trying in some way to do in the foregoing part of this paper; at least until he can to some extent convince himself that he has followed the reasons offered for the statement that such a conception as that of an infinite series is free from contradictions.

As regards this last question, when I honestly ask myself, Have I been able to follow the argument which would show the concept of mathematical infinity free from contradictions? I can only venture, by way of reply, with much fear and trembling, and under the lash of some vague sense of duty, to set forth quite simply what I have been able to make of it. That adventure, therefore, must occupy the remainder of my paper.

Prof. Cassius J. Cayser of Columbia University, in a little book whose name I have forgotten, makes a noble effort to present to the lay mind that newer mathematical conception of the infinite. To those who like myself have difficulty in following him beyond a certain depth I should recommend Mr. Russell; and to those who like myself cannot properly get into Mr. Russell I would recommend Prof. Cayser. My experience of not being able to read either of them as I should like to, is that when I put them together I can make a shape at the two. I will not trouble the reader about Prof. Cayser's golden spheres, though to some at least for whose slower comprehension those illustrations were designed, they seem most beautiful art; but will attempt to go straight to what appears to be the easiest inroad into the subject by asking quite naively, In what exactly consists the infinitude of that series of numbers which we have all in our childhood, I suppose, attempted to count to a finish 1, 2, 3, 4, 5, etc.?

In raising the question in this way I trust my attempt to keep to simplicity of statement will not be misunderstood. I always find that my surest means of learning is to state things as simply as I can and abide the criticism or the obloquy. And I believe firmly, even where the result is obloquy, that the free and unconstrained reaction of the lay mind upon the problems and findings of specialised thought, besides being enlightening for the lay mind, is not without its value for the progress of thought.

In what, then, are we to understand the infinitude consists,—of the infinite number of the numbers that there are?

Let us begin by counting them, 1, 2, 3, 4, 5, etc., calling the square ones, as we come to them, milestones; and as we count let's observe how many of these squares—4, 9, 16, 25, etc.—we pass. The distance from one to the next increases with every one we overtake. Up to 25 we have passed four. By the time we reach 100 we shall have passed ten. By the time we have reached 10,000 we shall have passed a hundred of our milestones. By the time we come to ten hundred thousand, all we shall have left behind us are a paltry thousand; and before we pick up the next thousand milestones on our journey we shall be—no one knows where!

In any case there are far fewer square numbers than there are numbers. And yet isn't it true that every number has its square?

The whole series of numbers contains within itself, as part of it, a series of squares. And yet the part series is the equivalent of the whole, in the sense that it can produce an item for every item in the whole. To every number in the containing series of numbers

there is a square in the contained series of squares. And the whole series has numbers of parts with this property. Thus there is a double of every number, a half and so forth.

Now that it has parts like this appears to be what is chiefly meant by calling the class of cardinal numbers an infinite class. That you cannot count them to a finish has nothing to do with the matter. Such appears to be Mr. Russell's essential contention. The infinity does not consist in mere on-and-on-ness, if one might so speak. It consists in the property of having parts, between which and the whole whereof they are parts, there is a one-one or point-for-point correspondence. A series is infinite when the part is equivalent to the whole in this sense.

Now either I am not apprehending this properly, or else there must be some misunderstanding when it is urged against the idealistic conception of the infinite. Idealism, with its eye directed on that which speaks to the mind of man in his mystic moments as the infinite, has expressed the finding which I explained in the earlier part of this paper, almost in the very words that are here being invented by the mathematicians to express the nature of the infinite as it meets them.

They say that the infinite is that whose parts are equivalent to itself. What is this but to discover that the infinite is the self-contained; which is precisely what idealism has striven to say?

Mr. Russell is eloquent on the absurdity of regarding the infinite as having anything to do with mere endless counting. What is that again but what idealism has taught? The only conclusion I can gather from the situation, the truth which it seems to me we shall settle down to after the noise of controversy has ceased, is that "the" infinite whereof human intuition speaks—in so far, at any rate, as the idealistic interpretation of that intuition is correct—does mirror itself in infinite series; that these series, or classes, understood as we are being taught to understand them, are, though abstract, yet true to the character of the ultimate whole of reality, so far as the ethical and æsthetic human faculties, assisted by philosophical interpretations, have disclosed it. For that which contains as a part within itself something which yet is in some sense the equivalent of itself, surely can be said to have itself for its own content.

Idealism has spoken of the infinite as the self-contained. What can to be self-contained mean except the having as its content, parts which are yet in some sense the equivalent or repetition of itself? We have talked of parts with the principle of the whole in them. And this mathematical account of the relation subsisting between a whole which is infinite and its parts seems to me to be but an abstract of the philosophical teaching; and to set the one against the other seems a mere misunderstanding. There is a real opposition. *But the opposition is not between the mathematician and the philosopher. The real opposition is between both and the naive conception of the infinite as simply an endless on and on.*

J. W. SCOTT.

## V.—CRITICAL NOTICES.

*Knowledge and Truth, An Epistemological Essay.* By LOUIS ARNAULD REID. London: Macmillan & Co., Ltd., 1923. Pp. xiii, 243.

MR. REID's essay, modest in bulk and pretensions, is well worth the careful study of all of us who are interested in "epistemological" problems. It is marked throughout by admirable common sense and point, and the conclusions reached seem, at least to the writer of the present notice, to be in the main thoroughly sound. To a mind jaded with the rhetoric of the Neo-Idealists of *lo spirito* and the wild and whirling paradoxes of "new" Realists, whose merit appears to lie wholly in their "newness"—"rawness," some of us would call it—it comes as a welcome relief to turn to the pages of an author whose sober judgment is not unworthy of the great philosopher whose name he has the honour to bear. Mr. Reid, I believe, is still young, and it is no disparagement of his performance if I go on to add that he seems to have one mark of youth; he has not, as yet, I believe, found the final and satisfactory way of saying some of the true things he means. That is, however, hardly a fault in any man, least of all in a young one; he is always to be pitied whose work does not convey the promise of better work yet to come. And it would be hard for a young epistemologist to promise more on his *début* as an author than Mr. Reid does.

I hope I shall be pardoned if, precisely because I think Mr. Reid's work so full of promise, I indulge in a little preliminary grumble about some small faults I find in it as literature. We cannot afford to get into the way of thinking that philosophy is not "letters," and that verbal slovenliness is consequently no fault in a "philosopher". What is worth saying at all is worth saying in the best form we can give it. Mr. Reid's form is good, so far as lucidity goes, but he is slovenly in certain small matters, and what is worse, slovenly in a way which suggests the evil influence of the journalist who earns his bread by misusing a language he has never properly learned. Thus, for example, there are several instances of the shocking misuse of the conjunction "because," when what is really meant is "though". *E.g.*, p. 34, "because there are no gaps in nature . . . there is no reason for supposing that there are no real wholes". This ought to mean "there are no gaps in nature, and this is why we should not suppose," or more briefly, "*though* there are no gaps in nature, this is not a reason for supposing" that there are no real

wholes. So p. 54, "because I think now of a red rose last summer . . . it does not follow that the identical existing rose last summer is my present content," really means "*though* the rose of which I am thinking is last summer's rose, it does not follow, etc". At p. 83, we have the vulgarism of "rather than" used as a particle of negation where the correct English is simply "not"; "in the 'sense' that Desdemona loves Cassio rather than *vice versa*," where what is meant is "in the sense that Desdemona loves Cassio, not that Cassio loves Desdemona". At p. 118 we get the illiterate use of *whatever* as a mere intensified *what*; "whatever 'sensation' means here, I do not know". On p. 200 we even find "which" used as a conjunction in the fashion characteristic of Sarah Gamp; "because knowledge is always an activity with physiological and psychical accompaniments, which truth is not, the term 'kinds' of truth may mislead". The English for this is "though truth is not this" or something of the kind. (I take it Mr. Reid must be forgiven certain blunders about the use of "shall" and "will," since it seems to be a point of Scottish national patriotism to offend an English ear in that way). These and the like are small matters, but they are blemishes which might easily be removed, and Mr. Reid in general writes so well that it is a pity he should disfigure his work. Is it purism that leads me also to dislike the trick of forming "possessives" with the inflection 's from "abstract" words such as "knowledge," "truth"? This is a mannerism of Mr. Bradley's, and Mr. Bradley is great enough, even as a stylist, to be allowed his eccentricities, but it is another thing to imitate them.

I may take this opportunity of saying that I could wish Mr. Reid had sometimes defined his terms a little more carefully. One has to get some way into his book before one finds out what he really means all through by a "content". What he means by an "entity" is nowhere explained, and this is the more to be regretted that he indulges in a great deal of polemic against the view that "images," "appearances," and the like are "entities". As I read his book, I hoped somewhere to discover precisely what he is intending to deny, but I found myself doomed to disappointment. I can make shift to guess at his general meaning—I think he is saying something about which I should agree with him—but the guess remains a guess. When, by squinting, I contrive to see a candle-flame "double," there is only one actual candle-flame, but there are certainly two of something or other, in spite of Prof. Alexander, and I do not see that there is any particular harm in calling each of them an "entity". Possibly Mr. Reid's point may be that, in such a case, there are not two "appearances," one of which is a "mere" appearance, but only two "appearings" of the one candle-flame? If that is his view, I believe I should agree with him, but, when we remember that *ποιεῖν* and *παύχειν* are traditionally *γένη τοῦ ὄντος*, it seems pedantic to object to calling an "appearing" an "entity," and to recur to the point so often and so vehemently.



One other very general observation shall be made in this place. Mr. Reid is professedly dealing with theories current among his own contemporaries. On those of us who are a little older than himself this inevitably produces the impression that he is taking far too seriously a good deal of ephemeral extravagance. We cannot help hoping that even the youngest and slangiest of American "new" realists, when he has read a little more and reflected a little longer, may come to be a little ashamed of his own crudities, and the elaborate refutation of such crudities looks to us a little like breaking a butterfly, or at least, a gnat, on the wheel. We incline to think that the last extravagances of the fashion are best left to vanish as the fashion changes from twelve-month to twelve-month. But the feeling is not wholly justified. Mr. Reid is writing primarily for his contemporaries and not for ours, and he does right to deal with the books and theories which are "real" to his audience. Even we who belong, alas, to a rather earlier day, can feel it refreshing to open a book about truth in which there is not too much discussion of veterans like Mr. Bradley and Prof. Bosanquet, while Pragmatism and M. Bergson are only occasionally mentioned. Still, though there is every justification for restricting the issue to theories current since 1900, I feel that Mr. Reid has lost something by confining his reading too exclusively to Anglo-American authors. Prof. Varisco's two valuable works *I Massimi Problemi* and *Conosci Te Stesso* have both been written and translated into English within the period with which Mr. Reid deals, and I believe he would have found in them a theory at once much more thoroughly thought out and much more congenial to himself than any of those he takes for discussion. Again, for the purpose of examining "critical Realism," it would, I believe, be very much more profitable to deal with the subtle and ingenious epistemology of St. Thomas and its developments in contemporary Neo-Thomism than to concern one's self exclusively with Dr. Moore, Prof. Laird, and some of their English and American colleagues. It is showing no disrespect to eminent contemporaries of my own for whom I have a great admiration to say that St. Thomas, after all, was probably a bigger philosopher than any of them, and that Neo-Thomism has the further advantage that it is not a doctrine thought out in a hurry but has profited by careful and critical reflexion on the whole development of "modern" epistemology. At more than one point in Mr. Reid's argument against all forms of the doctrine of "representative" perception and conception I feel that he would have been able to define the issues much more precisely and make his own points more effectively if he had been acquainted with the subtle Aristotelian-Thomistic doctrine of "sensible" and "intelligible" species and the part which they play in our knowing. Whether that doctrine is itself satisfactory is another matter, but it raises the whole question about "representation" in a singularly clear-cut form, and offers a solution which I think Mr. Reid would welcome as being very much on the lines of his own. There is one great



historical injustice for which I hope Mr. Reid may yet live to make amends. He tells us (p. 209) that Plato's *Theaetetus* "set the fashion," by which we must not be "overawed," of "supposing that error somehow lay in a state between being and not being," and goes on to remark that "the solution of the problem of error ought to follow from the solution of the problem of truth". I can only account for these sentences by supposing that Mr. Reid has never read the *Theaetetus*, though he is rash enough to disparage it. Plato never says, in the *Theaetetus*, or anywhere else, what he is accused of saying, and the whole point of the section of the dialogue which deals with error (187b-190e) is that no account of knowledge is possible which does not also account for error, precisely the point on which Mr. Reid himself wants to insist. Mr. Reid is under no obligation to study Plato, but he is, like the rest of the world, under the obligation not to criticise what he has not studied. It is a smaller matter that (p. 172) a good criticism of Mr. Russell is marred by the second-hand introduction of an impertinent jest—Mr. Reid calls it a "pertinent criticism"—of Mr. H. A. Prichard about the "hypnotic effect of pseudo-geometries". Mr. Prichard has done much better as a critic than this and it is unkind to him to give a new tenure of life to such a mere explosion of spleen. The "hypnotic" is an otiose "dyslogistic" epithet, and as for the "pseudo," Mr. Reid should talk to the mathematicians, who presumably know their own business, on the question whether Riemann, for example, was a "pseudo" geometer.

Mr. Reid's own point of view, which emerges in the first half of the book from criticism of rival theories, and is in the second half further developed on its own account, should, I take it, be described as a form of Critical Realism, though for my own part, I should deprecate the use of the word "realism," except in connexion with the problem of universals and as an antithesis to Nominalism or Terminalism. The main features of the doctrine may be said to be these: (1) Knowledge cannot be properly studied except in intimate connexion with knowing, and knowing is first and foremost an *activity* of a mind; there is no eliminating the mind or its act from epistemology without disaster: (2) knowing is an outgoing or transitive act in which the knowing mind grasps a reality other than and beyond itself, a reality which is repeatedly described, since by a voluntary limitation Mr. Reid, except in his final chapter, confines himself to our "knowledge of nature," as physical: (3) the apprehension of the object known is direct; we do not get at physical reality mediately by first knowing some kind of *tertium quid*; there are strictly speaking no such things as "images" or "appearances," there are only "imaging of things" and "things appearing": (4) "imaging" or "appearing," however, is a complex process, dependent partly on the character of the thing, partly on that of the medium through which it is perceived, partly on physiological, and perhaps on psychological, conditions internal to the organism or the mind; hence the possibility

of manifold error and the necessity for eliminating from "reality" all which can be shown to be due to the disturbing influence of the medium, the organism, or (it may be) the individual's mental predispositions; Mr. Reid holds that this elimination involves the dismissal of "secondary" qualities as "additions" made by the organism to reality: (5) we must not introduce into our theory any form of the notion of sense-data or *sensa* which the knowing mind pieces together; what is actually "given" is a single continuum in which all sorts of distinctions are implicit; the work of knowing is the making explicit of these distinctions, and the so-called "datum" of so many Realists is really the last product of this process. This is, I believe, a pretty fair summary of Mr. Reid's position. The "Idealists," represented chiefly by Prof. Joachim, are dismissed on the sound grounds that their favourite contention that no truth can be wholly true because it is not the whole of truth is a fallacy of amphibology and that the unity of the world affords no reason for denying that it contains lesser wholes. The "new Realists" are handled more fully, and their attempts to get rid of "mind" or to deny the reality of the "act of knowing," or (alternatively, I suppose) to reduce knowing to a selection (or do they mean a "selecting"?) out of a group of "logical entities," receive what is, to my mind, an unanswerable refutation. Current "critical" Realism receives a fuller treatment, the principal questions arising being whether our knowledge of the extra-mental world is or is not direct, what is the true account of "universals," and whether any of the current views about the "sense-datum" can be accepted.

For my own part, I feel that in the main, if I have understood Mr. Reid's exposition of his views correctly, I am only too glad to agree with most of them, though I am not always sure that he has put what seems to be his meaning into the clearest language. More than once I have noted a possible objection to his theses and a modification of them which would remove the objection only to find that, a few pages further on, the author takes account of the objection and restates his view in a way which makes it amount to what I had regarded as an amendment. I think that I could heartily accept all<sup>1</sup> the propositions in which I have tried to sum up his main position with the exception of the condemnation of secondary qualities, which seems to me quite arbitrary. I can find no reason for it except the inadequate one that our perception of such qualities is affected by the physiological state of our sense-organs and that we have no such objective standard for comparison of sounds or colours as we have in a foot-rule for the estimation of lengths. May it not be replied that, though the state of a sense-organ certainly affects my perceptions of sound or colour, it does not follow for a moment that they have not a core of genuine

<sup>1</sup> Provided that (2) is not to be understood so as to exclude all genuine self-knowledge.

objectivity? If a thing "really" has a certain colour, it may well be that a healthily functioning eye is needed for the correct apprehension of that colour; that disease or defect of the eye leads to misapprehension of the colour is no proof that the "real" thing seen has no colour at all. And I do not quite follow the argument about the foot-rule. As Socrates said long ago, two equally well-trained musicians will not disagree with one another on the question whether the strings of an instrument are in tune or not. The properly trained ear seems to me just as good an instrument for the establishment of objective musical intervals as the carefully graduated foot-rule for the ascertainment of objective lengths. And I should further like to ask Mr. Reid to reflect once more on the curious nature of the language he is driven to use when he talks about perceiving vibrations as sounds or of the eye transforming undulations into colours. To me, I am afraid, it seems simple nonsense to speak of perceiving as sounds anything but sounds or of transforming patterns of motion into colours. To take a definite instance, when a child sees a rainbow, what does it *see*? It may be from inherent dullness that I can only give one answer; it sees a parti-coloured bow, it does *not* see rain-drops and still less "light-waves". At school the child will one day be taught about the rain-drops and perhaps about the "light-waves," but, even if it should grow up to be a Professor of Physics it will never *see* them.

I do not mean by this that the physical world is not directly apprehended. Nothing in Mr. Reid's book seems to me better than his rejection of all "representative" theories of perception or thinking. But I mean that the object of perception by sense is the physical world *en gros*, as I think Mr. Reid would agree. A great deal of what we afterwards discover to be the *detail* of the physical world can never be rendered perceptible through our senses. In particular, our senses bring us into direct contact with the "molar" world, but never directly reveal the "molecular" or the "atomic" and still less the "sub-atomic". Our knowledge of the molecular and sub-molecular really is "mediated" by our direct contact in perception with the "molar". The physical world really embraces both these "scales" of being; colours are real and "undulations" are also real, but we see the first, we do not see the second. I think Mr. Reid would have reached a sounder position on this point if he had given careful study to Whitehead's admirably thought-out account of the differences between sensible, physical and scientific "objects" and their relations with one another. For, right or wrong, Whitehead's theory has manifestly a great future before it, and this is more than can be said of some of those on which Mr. Reid has lavished attention.

I could wish also that the account of "imaging" had been made more precise. I wholly agree with Mr. Reid in rejecting the view that what is directly apprehended in perception or in thinking is an "image" of an object which is not directly apprehended. Indeed, I think I hold this view more consistently than he does

himself, since his account of "secondary" qualities seems in the end to make them a kind of "image" of motions of different kinds. And I equally agree with him that it is a blunder in analysis to substitute a "static" image for the process, or rather act, of "imaging". There are no "images" of things, if by an image you mean an apprehended somewhat which intervenes as a *tertium quid* between physical nature and the mind which knows it. But this is not the last word on the matter. I may recur for explanation of my meaning to the Aristotelian-Thomistic doctrine of "sensible species". Thomas holds, like Aristotle, that all perception is effected by means of "sensible species," but he equally holds that the "species" are never the object apprehended; they are instrumental to the apprehension of the real physical object, or, in his own language, they are *quo scitur*, not *quod scitur*. Thus they really are something, and the error of the "representative" theories does not lie in believing them to be something, but in supposing them to be something other than what they are. This suggests some reflexions on the case of abnormal perception which is a standing subject of controversy between Prof. Alexander and Prof. Stout. When, to recur to my former example, I see a candle-flame "double," exactly what is it that happens? Am I seeing one real thing twice over, or am I seeing two things of which one is "unreal"? Prof. Stout, against Alexander, insists on the view that though there is only one candle, there are two presentations, and yet will not allow that the "presentation" is an object apprehended. Mr. Reid, as I take it, would agree with him. Yet I have always felt that there is an obscurity about Stout's contribution to the discussion; he does not seem to me to keep wholly to the view that "presentation" is *quo scitur*, not *quod scitur*. May we not avoid both this uncertainty and the apparent blinking of the fact in Prof. Alexander's rejoinders if we adopt a distinction like that of Whitehead between an "event" or "occurrence" and the "object" ingredient in the event? Then we could say that in these abnormal cases there is one object but more than one event. In fact, we see not two candle-flames but one, the only one there is, only we see it located in two places, in the place where it really is, and in a place where it is not. Some such distinction appears to me absolutely necessary for the explanation of facts of this kind, and I think it a pity that Mr. Reid should have neglected to deal with them, since it is they which are the stronghold of the "representative" theories. My point is that, as Whitehead puts it, it is events which are primarily "in space and time"; objects derive their location from the events in which they are "ingredient". Now these events are in part events in our own organism, and consequently an abnormal event in some part of the organism may give rise to a wrong location of an "object" (more precisely of a "sense-object"). The event in the organism which gives rise to the illusory location, and that which gives rise to the correct location are both no part whatever of what is perceived;

they are strictly *quo scitur*, not *quod*. Similarly with mirror-vision, except that the event which gives rise to the false location in this case is extra-organic. What I "see in the glass" is not an "image" of my face, but my actual face itself in a wrong location. At least, some such conclusion seems to be necessary if we are to rid ourselves wholly of the theory of "representative" perception. These remarks lead naturally up to the theory of universals, since, on a view of the Whitehead type, the particularity belongs to events, the object located in an event is always a universal. Mr. Reid, however, commits himself unreservedly to a very different theory of the universal, that of Prof. Stout, but I fancy he has not fully reckoned with the consequences to which he stands pledged. Like Prof. Stout he calls the universal the "distributive unity of its instances" and maintains that, *e.g.*, the redness of a particular rose is as particular as the rose itself. I own I feel considerable difficulty about the doctrine. As an *argumentum ad hominem* against Mr. Reid who, rightly in my opinion, thinks the "theological implications" of philosophical theories important, I would suggest that one of the consequences of this view of universals is Tritheism. The deity of each *hypostasis* of the Trinity must, on the theory, be a "particular" example of the universal "deity," and it follows that what the Christian formulæ really teach is a doctrine of three "gods" forming a kind of society. Mr. Reid is alive to the nominalistic implications of his own and Stout's formula; has he forgotten that when nominalism was first promulgated in the Middle Ages by Roscellinus, the violent opposition of the "realists" was based precisely on the objection that Roscellinus was in effect setting up three gods?

It may be said that such an argument has no weight except against a philosopher who is also an orthodox Christian, but I do not think the point can be sustained. What was at the bottom of the charge of Tritheism seems to me to be the correct perception that on any theory with nominalistic tendencies there can be no "unit classes," no universals with only one "instance". If you admit the possibility of such a universal, you are, apparently, denying your own formula that a universal is the "distributive unity" of a class of particulars. Yet I do not see how the possibility of such universals can be denied. The red of one rose, to be sure, is a different red from that of others, and "rose-red" embraces all the various shades of many roses. But it is at least thinkable that there are no two roses of exactly the same colour-shade, and yet the colour-shade of any one rose of all of them, is itself a universal; its character as a universal is not affected by the fact that there is only one "here—now" in which it is located. A universal cannot be converted into a particular by narrowing down the range of its "instances," or, in other language, the difference between particular and universal is not identical with the difference between complete and incomplete determination.

To put the same difficulty from the other end: if, "rose-red" is

the "distributive unity" of particular instances, the instances must, of course, be not "roses" but the "rednesses of the roses". If it were a fact that there are never two roses which are an exact colour-match, I could understand the view that the "particular instances" of red are the "redness of this rose," the different "redness of that rose," and so on. But what if there are colour-matches? You cannot, in that case, make the redness of the two roses into two different shades of red; the particularity can only come in on the ground that the *roses* are two; one is "here—now" the other is "there—then". I admit that this shows that there are two roses; but does it show that there are two rednesses? Again, I may be stupid, but I have to confess that I do not see how the supposed conclusion follows. The difference of the "here—now" from the "there—then" is real enough, but it is not a difference in colour, and so seems to me irrelevant to the "rednesses". I submit that reflexion on these considerations will show that Prof. Stout's formula is at least not obviously the last word in the age-long disputes about universals, besides throwing light on what was really meant by the doctrine of *universalia ante rem*. I do not myself see how the old problems are to be met at all except by some such distinction as that of Whitehead between "objects" and "events," which enables us to refer universality exclusively to the object and particularity to the event in which it is "situated". This does not amount to adopting the kind of "epistemological dualism" of "sense-datum" and "essence" to which Mr. Reid rightly objects, but it does amount to accepting the Platonic doctrine of the disparity of sense and thought. That distinction seems to me indispensable in any sound "epistemology". Not that in our knowledge of nature we are first presented separately with some kind of merely given "manifold of sense" which we then proceed to elaborate; I see no way of explaining the growth of human knowledge, unless we admit that both functions are present in a rudimentary form from the very first dawn of human consciousness. If a baby were *merely* "sensitive," I can see no way by which it could ever become anything more. But, however closely conjoined, the functions of sense and thought are radically distinct. Mr. Reid, I believe, is too unwilling to admit this disparateness, and the consequence is that his account of the way in which we come by our knowledge of the universal has the usual defect of the ordinary theories about "abstraction". A child is supposed, *e.g.*, to be shown a red apple, a red cherry, a red shawl and so on, and this is supposed to explain how it comes to apprehend red as a colour common to all the three, much stress being laid on the employment of the same word "red" in all the cases as that which determines the child to perform the "abstraction". To my mind, this account leaves out altogether everything distinctive of the "abstractive" process. I can best explain my dissatisfaction by an illustration. Suppose I have heard the name "Smith" used, in talk about literature, alike for Henry Smith the Cambridge Platonist, Adam

Smith, Edmund Smith the Whig poetaster, and Horace Smith of the *Rejected Addresses*. When I come into a company who are talking of literature and hear "Smith" mentioned, I shall suppose that the person referred to is one or other of these men, though as yet I do not know which of them. So Mr. Reid supposes the child to come by the understanding that the word "red" is a name for the apple or the shawl or the cherry. But the two cases are really very different. When a child learns the meaning of "red," he does not learn that "red" means one or other of the three things, the apple, the cherry, the shawl, but that it means the *colour* which all three exhibit. There is "abstraction" in this process, there is no "abstraction" in learning to take Smith as meaning "one or other" of Henry, Adam, Edmund and Horace. No account of the second process is by itself an adequate account of the first. Smith, in the one case, denotes one of four men, though I do not know which; "red," to a child who has learned to use the word, does not denote an apple, a cherry or a shawl, either singly or together; it denotes the *colour* of all three. To "explain" the process of "abstraction" would mean to explain how attention begins to be given to the universal "colour" as it is successively illustrated. I do not believe that any complete explanation is possible. We have to fall back in the end on an "ultimate tendency," and that is as much as to say that we have to make the radical disparity of sense and thinking characteristic of the very first stages of our human consciousness. In fact, we are driven with Plato, to regard sense as everywhere "suggestive" of what it does *not* contain.

Mr. Reid's view of truth is a direct corollary of his views about knowledge. Truth is not properly a character of things or objects, nor yet of symbols; things are neither true nor false, they are simply as they are. And symbols, *e.g.*, verbal propositions, are not in themselves true or false; they are, taken by themselves, just noises or scratches. Truth is a character of knowledge, and knowledge is the act of a mind efficiently apprehending a real object. Truth is thus just the right functioning of a mind doing its work of knowing. In this main view I can only heartily concur, especially in the vigorous defence of the view that all knowing is a living personal act, though knowledge once won can be impersonally expressed in symbols of various kinds. I wish, however, that Mr. Reid had remembered, as Plato does in the *Theaetetus*, that "knowledge," in the strict sense, is not the only cognitive activity which apprehends real objects aright. I do not know that St. Luke wrote the third Gospel or that nitrogen has been decomposed, but if I believe these propositions, and if St. Luke did write the Gospel, and if a certain distinguished man of science did really decompose nitrogen, my belief apprehends reality and apprehends it correctly. If I believe that there is life on Mars and you believe that there is not, then it is certain that one or other of us believes something which is true, though each of us is aware that he does not *know* the truth of the matter. The point is worth noting for



its importance as disposing of all attempts to discover a psychological criterion of truth.

It is natural that Mr. Reid should very decidedly reject the so-called "coherence" theory of truth, and he seems to me right in doing so. I cannot see that fiction need be less coherent than authentic history, though, no doubt, the most careful contriver of fiction is in danger of failing to make his tale consistent, and the average contriver is almost sure to commit easily detected inconsistencies. But the fiction most commonly reveals itself not by contradicting itself but by contradicting *fact*, as for example, when Scott in *Woodstock* makes Charles II. refer in the year 1652 to *Samson Agonistes*, which was not published until 1671. And if it could be shown that, e.g., *Tom Jones* nowhere contradicts itself and nowhere comes into collision with known historical facts, still this would not prove that Mr. Jones and his doings are not fictitious. I am not sure that Mr. Reid's rejection of the "correspondence" theory is equally justified. At any rate, his arguments only appear to hold good against certain special types of correspondence theory. Of course, no one who rejects "representative" perception and thinking can possibly hold the theory in the form of a doctrine of the "copying" of facts by "images" or "thoughts". And it is easy, again, to show, as Mr. Reid does, that truth cannot be "correspondence" between a speculative theory and the propositions stating the experimental facts which "verify" the theory, since these propositions themselves must be true. But I seriously doubt whether either the plain man or the thoughtful philosopher has either of these peculiar views in mind when he speaks of truth as "correspondence" with reality. Correspondence is a term of very wide meaning. When one says that the points on a terminated straight line correspond to the real numbers from 0 to 1 inclusive, one is saying something true and important, but it is not meant that the points are "copies" of the numbers. All that is meant is that the two series can be so ordered that there is a correlation between one and only one number of each series and one and only one number of the other. Just so, we speak frequently enough of the correspondence between definite numerical ratios and definite intervals of the musical scale. Hence it seems to me that Mr. Reid's own doctrine is really a doctrine of correspondence. If we had fully adequate knowledge of nature, this, I take it, would mean that all our propositions about nature were correct apprehensions of reality and that there is no "fact" in nature which is not apprehended. Does the old formula that knowledge is *adequatio intellectus cum re* mean anything else?

Throughout the book, until we reach the concluding chapter, we are concerned with "truth" in the scientific sense, truth which can be expressed in propositions. The last chapter contains some very striking reflexions on the meaning of the statement that morality, art, religion have a "truth" of their own, which, of course, is not "propositional". Mr. Reid is clearly feeling his way here towards



a theory which he has not as yet worked out. His remarks have a point and interest which makes one look forward with high anticipations to a possible fuller treatment of a very important theme. It is refreshing to find a young philosopher so completely emancipated from undue subservience to the curiously one-sided attitude of mind called "science". To be truly in the line of spiritual descent from the great philosophers means to be very sure that the range of philosophy is as wide as life and that "science" is only one very highly professionalised way of living.

A. E. TAYLOR.

*The Nature of Intelligence and the Principles of Cognition.* By C. SPEARMAN. Macmillan & Co., London, 1923. Pp. viii + 358. 15s. net.

AFTER a period in which the psychology of instinct, sentiment and desire has been predominant one gives a peculiar welcome to a volume reverting to earlier fashions and dealing with cognition. This volume is of further interest in that it is the first contribution in book form of so distinguished a psychologist as Prof. Spearman, and gives us in convenient compass not only the essential conclusions of some of his valuable researches but a very remarkable additional contribution to the psychology of cognition.

Prof. Spearman commences with a discussion of some of the findings of experimenters with mental tests, who have sought for, and, some claim, proved, the existence of a general factor or factors in all intelligent operations, which are said to explain the intercorrelation of the results of tests of very different kinds. Spearman's own view, as is well known, is that all mental functions involving intelligence depend on (1) a general factor which he regards as consisting in "something of the nature of an energy or power, which serves in common the whole cortex or possibly even the whole nervous system" (p. 5); and (2) a specific factor or factors peculiar to the particular type of mental operation concerned.

In an acute examination, however, of the views of some prominent men who have concerned themselves with such problems as the general intelligence factor in mental tests, Spearman finds great confusion or at least lack of definiteness. Thus Binet writes: "There is in intelligence, it seems to us, one fundamental organ, an organ whose defectiveness or alteration has the most importance for practical life: this is judgment. . . . A person may be feeble or imbecile if he is lacking in judgment: with good judgment he can never be so. The test of intellectual psychology appears of little importance beside judgment. Memory is distinct and independent of judgment."

Yet some years later Binet "defines intelligence in a completely different manner," writing as follows: "comprehension, invention, direction and censorship; intelligence lies in these four words.

Consequently, we can conclude already from what precedes that these four functions, which are primordial, may be considered to have been studied by our method." And the matter becomes more puzzling, says Spearman, when we find that on the same page invention is analysed into "a crowd of faculties" including "memory, imagination, judgment and specially language".

Nor is Spearman satisfied with the attempt to define intelligence by a use of biological concepts such as are involved in the phrase "adaptability to new situations"; or with such a definition as "the power of good responses from the point of view of truth" (Thorndike), or "capacity to acquire capacity" (Woodrow), or "capacity to profit by experience" (Dearborn). In particular Spearman complains, with undoubted justification, that too often there is no effort made to give proof that intelligence, as defined by the experimenter, really is involved in the mental operations of the test. The climax is reached when one experimenter (Bobertag) writes as follows: "The tests ought to be conceived in such a fashion that they should address themselves as much as possible to pure Intelligence. . . . One may naturally enquire, what is after all this pure intelligence? . . . The knowledge of the essence of intelligence is naturally a thing that merits profound research; I nevertheless believe that the technique of the examination would not profit by them" (*sic*).

Spearman is not better satisfied with the attempts of living English psychologists to define intelligence, and he concludes that an essential precondition of an understanding of the action of intelligence is a finally established psychology of cognition. This is what he seeks to set forth—attempting to establish fundamental principles by analysis of the processes in the adult mind, not ignoring in this study the results of experimental enquiries, but regarding as of little value the "alleged conscious operations of young children and the lower animals," though he makes apt use himself in a number of cases of inferences from child language and behaviour.

At the outset Spearman emphasises the fact, which would surely be widely admitted, that if psychology is to be a genuine science it must enunciate ultimate laws. He then proceeds to lay down three fundamental principles which he calls neo-genetic, as they and "they alone are generative of new items in the field of cognition". The first of these is the apprehension of experience: "any lived experience tends to evoke immediately a knowing of its characters and experienter". Portions of Spearman's exposition of this principle suggest that he would hold that such a cognising of experience and such an awareness of a subject carrier were inseparable from experience itself, that is, inevitably accompanied it. For example he refers approvingly to "the forcible words of Lotze, sharply opposed though they may be to the current assertion that self-consciousness does not even begin until a comparatively advanced period of mental growth, 'Our ideas, our feelings,

our efforts, are comprehensible to us only as states or energies of it (the ego), not as events floating unattached in a void'."

It might be replied that Lotze does not say they cannot be experienced without self-consciousness—only that we cannot comprehend them except as experiences of a self. Spearman later makes it clear, however, that his three principles are not necessary ones but only contingent, and, furthermore he points out (p. 57) that his principles extend only to "such beliefs as rest upon adequate evidence" (though in the concluding chapter of the book he suggests that his principles may revolutionise child, and even animal, psychology, p. 353). So that Spearman is by no means committed to a view that self-consciousness is inseparable from consciousness in the usually accepted wider sense. This supervening of knowledge upon experience would appear to be only a possible, not a necessary event. On many occasions, probably the great majority, it never happens at all.

The second principle is that of "the eduction of relations": "The presenting of any two characters tends to evoke immediately a knowing of relation between them".

The data for this process must be definitely cognitive. "Experiences blindly lived are inadequate." A relation is defined as an attribute which mediates between two or more fundaments. Incidentally in discussing this principle Spearman points out that the apprehension of the relation may be clearer than that of the items related, and, a further point of interest, that the simultaneous development of the apprehension of fundaments and relations is possible. In an acute argument Spearman shows that the term judgment is too large and wide to denote this immediate "educing of relations".

It is in this process that "knowledge has an immediate source other than lived experience, for relations may be educed from the very nature of the characters as presented".

The third principle is the "eduction of correlates".

"The presenting of any character together with any relation tends to evoke immediately a knowing of the correlative character." An example of this is the typical 'analogies test'; thus, in "white is to black as good is to—", the giving of the relation of opposite (white is to black), and of the further fundament "good," produces the correlate "bad". Spearman is undoubtedly able to show the importance of this principle in thought processes which at first may not seem to involve it. He even claims for it the source of our distinction between an active being like the self, and non-living matter: "for when once certain characters of gestural movement have come to be taken as related to the degree of consciousness of an underlying psyche, then the opposite character in respect of movements will, still by virtue of just the same relation as before, now produce as correlate the opposite to a conscious psyche" (p. 249).

These three principles are not of course new discoveries in

themselves. Psychologists have already recognised the emergence of the apprehension of relation as an important process, and some modern psychologists have shown that it is something which cannot be reduced to mere association of other elements.

Similarly, the 'eduction of correlates' is familiar in the process of production of analogies, the importance of which has already been emphasised by Stout in his discussion of 'relative suggestion,' with certain types of which the eduction of correlates seems to me identical.

The originality of the present volume then lies not in the enunciation of a new law or tendency, but in the wide scope which Spearman gives to these three tendencies, and his emphasis upon their fundamental nature. It is partly in his elimination that Spearman's characteristic views are novel, especially later in his subtle analysis of memory, reasoning and imagination into these three fundamental processes.

While these three processes govern the whole of the production of new mental products they are qualitative only and need supplementing as a complete statement of ultimate laws by quantitative principles. Hence Spearman introduces five of these last. The qualitative principles "prescribe the nature of cognition," the quantitative "only the degree in which cognition of already prescribed nature actually occurs". The first quantitative principle is that of mental energy—"Every mind tends to keep its total simultaneous cognitive output constant in quantity, however varying in quality".

The second quantitative principle is retentivity. "The occurrence of any cognitive event produces a tendency for it to occur afterwards."

The third is fatigue. "The occurrence of any cognitive event produces a tendency opposed to its occurring afterwards."

The fourth quantitative principle is conative control. "The intensity of cognition can be controlled by conation."

The fifth is that of primordial potencies. "Every manifestation of the preceding four quantitative principles is superposed upon, as its ultimate basis, certain primordial but variable individual potencies." These quantitative principles also bring about some 'aneogenetic' processes—(i) reproduction, dependent on the energy-principle; (ii) disparition, dependent on fatigue; and (iii) clearness-variation.

Prof. Spearman expressly states that the full treatment of these quantitative principles is being reserved for subsequent works; hence any serious criticism here would be unjustifiable. So intimately bound up, however, are these principles with the whole purpose of the book that there is a difficulty in estimating the ultimate value of Prof. Spearman's bold conception until the whole of his system is set forth. Indeed, the reading of this book, welcome as already said because of its concentration on cognition, has, nevertheless, brought home to the present writer more forcibly

than ever the impossibility of satisfactory treatment of cognitive processes apart from feeling and conation.

The second quantitative principle above, for example, seems to me to fail when the influence of various types of feeling and conation are considered. The principle needs limiting, as no doubt Prof. Spearman will proceed to do in his further work: (i) by the fundamental tendency for repeatedly unsuccessful conations together with some at least of their cognitive correlates to cease, and possibly (ii) by the tendency for unpleasant ideas to be repressed. The concept of interest seems to me also essential in the consideration of intelligence, to the significance of which Spearman in his conclusion returns. "Circumstances appear," he writes, "to be driving us towards yet another alternative, which consists in extending the range of the word (intelligence) so as to cover all three neogenetic principles in every one of their manifestations."

But that being so, intelligence implies surely *relevant* relation-educing and *right* correlate-educing. This brings us to the crucial question as to what are the conditions which favour eductions and right eductions. The answer to this would seem to be a further essential, on Spearman's system, for the satisfactory definition of intelligence.

Lack of space prevents me from giving more than a mere reference to Spearman's acute discussion of the question of the problem of imageless, and even wordless, thought processes, in which he uses in a very masterly way a mass of experimental material, in particular the valuable researches of Dr. Aveling.

Spearman himself makes very high claims for his contribution as a foundation for scientific psychology, and several prominent psychologists have already gone far to accede to the claim. The whole work contains so many suggestive if difficult ideas and Spearman's scheme is so novel that one rises from a perusal of the book feeling that before attempting to give a comprehensive judgment on his work one must go again through the psychological classics, and through one's own attempt at the formulation of psychological truth, with Spearman's scheme in mind. This in itself is some indication of the value, to the present writer, of Spearman's work.

C. W. VALENTINE.

## VI.—NEW BOOKS.

*Conflict and Dream.* By W. H. R. RIVERS, LL.D., F.R.S., with a Preface by G. ELLIOT SMITH, F.R.S. The International Library of Psychology, Philosophy and Scientific Method. London: Kegan Paul, Trench, Trubner & Co., Ltd., 1923. Pp. xi + 195.

THE material of this book was first of all delivered in a series of lectures at the Psychological Laboratory in the University of Cambridge. It was Dr. Rivers' custom to invite his audience, at the close of each lecture, to ask questions or to suggest criticism. Almost always there was a considerable amount of discussion, and on several points of importance Rivers appeared to modify his views. His changes, however, were not written down in his lecture notes, and consequently cannot appear in this book. As any reader would probably imagine, the alterations were, in general, along the line of an admission that the scheme put forward was too simple to meet the actual facts of the case. For Dr. Rivers undoubtedly shared what seems to be a sort of fatal tendency attacking nearly everybody who tries to explain the dream, a tendency to put all explanations into one formula.

*Conflict and Dream* is an exceedingly pleasing book to read. It displays all the characteristics of Rivers' later writings: apparent freedom from ambiguity, liveliness, and a straightforward, incisive, and vigorous style. Some of the chapter headings, and many of the sectional titles are like those of the stories in some popular monthly magazine: "The 'Cup and Saucer' Dream," "The 'Reproachful Letter' Dream," "The 'Suicide' Dream," and so on. Rivers was anxious that his theory should not in any way seem to be detached from facts. But in truth none of the dreams recorded can be said to be completely analysed, and the strength of the book does not really depend on the illustrative examples.

Rivers objects that Freud's theory of wish-fulfilment is too simple. "I propose," he says, "to regard Freud's formula as unduly simple, and suggest as an alternative the working hypothesis that the dream is the solution, or attempted solution, of a conflict which finds expression in ways characteristic of different levels of early experience." This is not really so big a change as might appear, and the difficulty is in connexion with the term "wish," rather than with the underlying notion. A conflict must mean the presence of opposed tendencies having different ends. A solution or an attempted solution must mean that one of the ends, or a combination of the ends, is sought to the exclusion of the others. Any such seeking of an end to the exclusion of others is a "wish" in the Freudian sense of the term.

It may of course be justly maintained that the formula "solution of a conflict" is preferable to "wish fulfilment," because the former does not carry the significations about "consciousness" that the latter does. But in another way Rivers' phrase seems unhappy. In a sense every change in experience, and not dreams alone, occurs only because something different is sought. There is conflict between "what is" and "something else," and as a result "what is" gives place to "something else". In

fact "solution of a conflict" explains too much to explain anything. The form of explanation proposed is significant only when the particular opposed tendencies operative are laid bare, and the mechanism of their interaction is shown.

The second great point in Rivers' treatment is that the dream's general character, and "especially its apparently fantastic and grotesque features, are due to the fact that it is an expression of early modes of mental functioning which have been allowed to come into action, owing to the removal of higher restraining influences derived from the experience of later life". "I have supposed," Rivers goes on, "that sleep is a process which acts progressively upon successively different levels of mental activity. . . . The deeper the sleep, the greater the number of such levels put out of action, and the lower and earlier the levels which are left to manifest their special modes of activity in the dream." The whole conception seems to me to do terrible violence to facts in the name of simplicity of theory. Mental life is not organised into a series of chronological levels, with all the material belonging to one age of life in one group, and all that belonging to another in a different group. Rivers came to see the inadequacy of his first view, and at the close of the chapter on *The Content of Dreams* attempted to deal briefly with the difficulties. He suggested that only certain elements of recent experience are obliterated in sleep. Some remain and affect the dream. "If certain streaks, as it were, of recent experience remain active after the greater part of this recent experience has been put out of action in sleep, many features of the variegated character of the dream become explicable which wholly fail to fit in with the simple view that the higher levels of mental activity are wholly inhibited in sleep." No doubt this is true, but it is not very helpful, for the real difficulty is to show what elements of recent experience persist and why. It is also equally obvious that masses of material belonging to remote experience do not persist. And just the same questions arise in reference to these too.

It is high time that somebody should now re-investigate dreams with a continually watchful eye upon many of the happenings of the waking life. The one is about as complicated as the other, and calls for about as big a variety of explanatory principles. Moreover it may well be that the principles of explanation required are not so widely divergent as has in several quarters been maintained.

Dr. Rivers' book can hardly give complete satisfaction to any reader. But it cannot fail to start many a promising train of thought, and to raise in acute form many an interesting problem.

F. C. BARTLETT.

*The Works of Aristotle translated into English. Meteorologica.* By E. W. WEBSTER. Oxford: Clarendon Press, 1923.

When we think of the wrong done to mankind by the promoters of the late War, we are, perhaps, only too apt to dwell primarily on the "material" losses the world has suffered, the set backs to commerce and industry, the rise of the cost of living and so forth. It is well to be reminded from time to time, as the editor's note at the beginning of this volume reminds us, of a more irreparable loss for which we have to thank the *tedeschi lurchi* of Berlin, the loss of lives that promised to enrich the world permanently with the higher treasures of science and letters and art. The genuine "Hun," as we know, cares nothing for any of the three; they are not what he means by *Kultur*, and we must not forget that, when our politicians ask us to take him to our hearts unregenerate. The *Meteorologica* is not



only an interesting book, but in view of its long influence on mediæval thought, an important one, and one on which too little work has been done by the scholars who use our language. For the text, indeed, we have now, as we had not until very recently, the excellent edition of Mr. Fobes, but the interpretation of its numerous difficulties has been unduly neglected. Now, thanks to Mr. Webster and the general editor of the Oxford translation of Aristotle, we have at last a version from which the Aristotelian scholar has much to learn and to which the student of the history of science whose Greek is defective can go with reasonable confidence for information about Aristotle's theories about the general character of the processes which go on in the inanimate part of the sublunary world.

The translation is careful and usually very happy in its renderings, and is throughout based upon a scholarly reconstruction of the text, left by Bekker in an exceptionally unsatisfactory state. It is not wholly clear how much is due to Mr. Webster and how much to the revision of his work by the editor, though no amount of editorial revision could have made the book as good as it is if the translator's original draught had not been a piece of scholarship most admirable in so young a man. One omission may perhaps be noted. There should have been at the beginning or end of the volume a list of the *sigla* and abbreviations employed in the notes. The reader who is not already something of an Aristotelian scholar is left without adequate information about the date and worth of the MSS. employed in the reconstitution of the text; what is more important, he is never told what such abbreviations as "Ald.," "Bag.," stand for, and finds himself referred from time to time to Vicomercatus, Ideler, Thurot, without any information about the dates of these scholars or the precise nature of their work on the *Meteorologica*. I am not sure that it would not be possible to rise from the reading of the translation uncertain whether Vicomercatus lived before or after Ideler, and whether either made any use of the work of the other. A special student of Aristotle will, to be sure, possess this knowledge already, but it is to be hoped that the Oxford translation will appeal to a wider circle of readers who do not possess it and should have been provided with it. In omitting it, the editor is consistent with his practice in earlier volumes of the translation, but I would respectfully suggest that the practice is unfortunate and should be changed.

The great difficulty which presents itself to a translator, when once he has settled his text, is to find equivalents for the standing technical terms of Aristotle's vocabulary. On the whole, this difficulty has been satisfactorily overcome though it is a pity that in the case of one or two difficult words uniformity has not been preserved. *E.g.*, "heat" should be kept for *θερμότης* and some other word found for *πύρωσις*, and it is unfortunate that "physical" should sometimes appear as a rendering of *φυσικός*, sometimes stand for *σωματικός* or its equivalent. Real slips in rendering are rare, but I have noted one or two. Thus at 341b, 32 (the lines are those of the translation), is it certain that "continuously" is the meaning of Aristotle's *ἐπ' ἀρχὴν* (taken by Bonitz s.v. to mean "thoroughly")? In 343a, 14, the translation speaks of the sun being "reflected to our sight," though Aristotle's whole theory of halos and rainbows becomes unintelligible unless we are careful to remember, as the translator usually is, that it is based on the assumption that we see by a "visual ray" issuing from the eye, and that it is this ray which is "reflected" to the sun in the cases in point. In 344a, 3, "the whole might begin to move," the verb should have been more precisely "to revolve," if the process described is to be properly understood. At 344a, 30, "peculiar light" is misleading; the rendering should have been "proper light" (= *Eigenlicht*). In 348a, 4, "the lower parts of the earth" seems to be a



positive mistranslation of τὰ κάτω τῆς γῆς, where the meaning is clearly "the interior parts," *subterranea*. 350a, 6, "if we except rivers, water rarely appears in the plains". Surely ἐν δὲ τοῖς πεδίοις ἄνευ ποταμῶν ὀλιγοὶ γίνονται πάνταν means "but in level country springs without rivers flowing from them are very uncommon". At 350b, 16, γῆς περίοδοι are spoken of as "itineraries," and so in later places, but Aristotle rather means "maps". (For this sense cf. Aristophanes, *Clouds*, 206.) 353 a, 18, "their effect may be fulfilled" (ἔχει πέρας); "comes to an end" would be more intelligible. 362b, 7, "the earth is known to be uninhabitable before the sun is in the zenith" is hardly intelligible in English and suggests a misconstruction of the Greek; tr. "before the shadow," *sc.*, that cast at noon, "vanishes," *i.e.*, before you reach the tropics where, on one day in the year, the noon-day sun is vertically overhead and casts no shadow. It looks as though by an oversight the translator had "understood" τὸν ἥλιον as subject to ἐπολείπειν. 376a, 10, "Draw a line *AB* outside of the figure" (ἐκκείσθω ὅν τις γραμμὴ ἡ *AB*). This is a definite mistranslation. ἐκκείσθω has its usual technical meaning, "let there be expounded," *i.e.*, "take anywhere, assume, a line". It makes no difference whether you exhibit *AB* within or without the figure already constructed. The very smallness of these oversights is the best testimony to the general excellence of the rendering.

It should be specially noted that, as in some former instalments of the translation, the mere correction of Bekker's erratic punctuation in numerous places serves all the purposes of an explanatory commentary.

A. E. TAYLOR.

*The Psychology of Laughter and Comedy.* By J. Y. T. GREIG, M.A.  
London: George Allen & Unwin, Ltd., 1923. Pp. 304.

Like many modern writers, Mr. Greig thinks that we laugh, as Falstaff was a coward, "on instinct". He seems at the outset to have been misled by the nursery tickle, which is usually sportive, into over-estimating the closeness of connexion between laughter and tickling. The contrast between the laughing body and the tickled body should prevent this excessive estimate. The response to a tickle, whether a horse flicks his ear at the touch of a straw or a sneeze expels an irritant from a nose or a child squirms from tickling fingers, is a struggle or, more simply, an act of riddance. The laugh is pleasantly expended on the body, collapses the laughter, and does not struggle. The avoiding function of the tickled squirm is too unlike the indifference of the laugh to either avoiding or approaching for any "such tactual stimuli" to be "normally" or primarily occasions of laughter (p. 31).

Since "ticklishness and sex" are "closely related" (p. 43), as well as ticklishness and laughter, "these facts point to the hypothesis that laughter, in its beginnings at least, is somehow associated with the instinct of love" (p. 44). Mr. Greig finds that this hypothesis justifies its preliminary promise.

The smile appears early, though at different dates (p. 26), "as a kind of feeble and vacillating continuation of the behaviour of feeding" (p. 49), drops out of this instinct and is retained by the closely associated instinct of love (p. 51), which begins in "the nursing embrace" (p. 47) and extends (apparently) to the child's whole world (*vide* p. 48).

The relaxation in the smile seems to be inadequately perceived: Erasmus Darwin connected it with relaxation of the sphincter muscle after sucking and Freud sees in the smile the satiated nursling. When

the smile is "established . . . among the ill-co-ordinated responses" of the love instinct (p. 52) obstructions arise. If the gathered energy is suddenly unrequired through the quick removal of an obstacle and the smile is an inadequate channel, the "deeper breath" of "the previous bracing up" is expired more noisily and explosively "than normal breathing," links up with the already established smile, and magnifies it into a laugh (pp. 52-53).

Peep-bo, which has an analogue in jack-in-the-box, is a rudimentary form of more developed and complicated comical situations (p. 56). Its effect depends upon the "disappearance of the face" which "was an interruption, to meet which energy has been instinctively called up, and it is this energy, or some of it, which slips out in the chuckle and the laugh" (p. 55). The "unexpected, as such," Mr. Greig truly says, is not "the cause of laughter" (p. 57), for a burglar in a bedroom is not funny (p. 56). But the unexpected in a situation of relief, when a call on is suddenly followed by a call off because no effort is needed, is a typically laughable situation. The burglar is not expected, but the burgled householder does not laugh because there is a call by emergency. Peep-bo, Mr. Greig does not seem to realise fully, calls off into *relief*.

Since laughter is an interjection that may pleasantly interrupt seriousness or break off an imminent quarrel, Mr. Greig rightly rejects play theories of laughter (p. 67). Since it is, so to speak, a momentary holiday and rises easily in the carnival mood, "it is clear that the connexion between laughter and play is very close" (p. 67).

"Laughter never occurs except as a sequel to some interruption of behaviour" (p. 79). Because hate is love turned inside out, the laugh, from marking an interruption of love behaviour, can mark an interruption in the behaviour of hate (p. 86). If Mr. Greig diagnosed the fundamental situation of laughter as relief he could still justly condemn derision theories for attempting "to cover the whole of laughter" but might be less certain that "laughter is more at home in love behaviour than in hate behaviour" (p. 87). Animus clings very persistently to the laugh and triumphs invite laughter by their element of relief. Laughter is very relative to the laugher, as he perceives (p. 71), and the sympathies or animosities of the laugher colour up his laugh.

Mr. Greig traces this "double strain" of hate and love "in laughter from its simplest to its most complex manifestations" and always discovers in the evidence an "intimate connexion between love and laughter" (p. 223). Laughter at the sexual, obscene, and indecent easily breaks down a barrier against their enjoyment and surplus energy is expended in laughing (ch. v.). "Deformity, clumsiness, and personal assaults," when they produce laughter, interrupt our love behaviour; when this interruption is easily overpassed laughter follows (pp. 111-112). A Freudian predilection promptly detects a "phallic symbol" in Punch (p. 115), physical violence is an effective stimulus of sexual behaviour (p. 121), gaucherie and mishaps like falling or losing one's hat incite love impulses (pp. 122-129): thus all occasions of laughter are firmly brought within the circle of "love" in tincts. In a similar way the various "comic devices," from jack-in-the-box and nine-pins (which depend for much of their interest "on unregarded personification" (p. 141)) to "moral delinquencies" (ch. vii.) and the "comic treatment of vices" (ch. viii.), enter the circle. When the satirical is also laughable it has appealed to sexual or love impulses (ch. ix.) and the laugh can sting because the triviality of an easily overcome interruption to behaviour "passes over from the laugher to us" (p. 187). Sympathy can infuse humorous laughter because "pity is love obstructed by sympathetic displeasure, often by sympathetic pain" (p. 197). In laughing wit, and

"at much of the world's purest wit we do not laugh at all" (p. 219), love behaviour is interrupted or hate behaviour restrained (p. 220).

If Mr. Greig had realised that the laugh may mark a break in *any* behaviour he might have paused before identifying all behaviour with love behaviour—as he virtually does. The laugh is only "manifestly disorderly" (p. 40) in the sense that it demobilises an unrequired effort—as an army is disbanded at the close of war. It arises when an effort, physical or mental, is suddenly called off because unrequired—it arises in the situation of relief so clearly written on the mechanics of laughing. Mr. Greig does not realise clearly that many different feelings or emotions are invited into the laugh because they are appropriate to relief and the book is inadequately pervaded by the realisation of the problem presented by the *sense of the ludicrous*.

The book is welcome—if only as an inevitable attempt to conform laughter to Freudian psychological traditions. Its theme is carefully thought out and well presented.

We are also greatly indebted to Mr. Greig for an important appendix containing "a historical summary" of many "theories of laughter and comedy".

J. C. GREGORY.

*Le Problème de la Vérité dans la Philosophie de Spinoza.* By RAPHAËL LÉVÊQUE. (Publications de la Faculté des Lettres de l'Université de Strasbourg. Fascicule 17.) Strasbourg, 1923. Pp. x, 155.

Mr. Lévêque's painstaking essay on Spinoza's theory of knowledge was prepared as a *Mémoire* for the *Diplôme d'études supérieures de philosophie* in the University of Strasbourg, and it is as such that it must be judged. I do not at all suggest that it is in need of tender treatment as a 'first offence,' for its author is a sufficiently earnest student of Spinoza to be well able to look after himself; but I think that anything like a 'peddling' criticism of its arguments and conclusions would be out of place in the pages of *MIND*.

The essay is constructed upon the very orderly plan of longish chapters subdivided into headed sections of about a page-length on the average. If we exclude the short Introduction and the Conclusion, there are only three chapters (on Truth, God and Man, and the Problem of Knowledge, respectively); and Mr. Lévêque is to be congratulated upon keeping closely to his subject in spite of the many temptations to stray into important sidepaths; for with Spinoza knowledge is not merely foundational, nor even central: it is everything.

In the main the author follows the ordinary course in his exposition, but he does so with a difference; and it is upon some aspects of that difference that I wish to comment as briefly as may be. The difference may be expressed as a consciousness more vivid than usual of the distinction between the actual content of a mode and its eternal intelligible essence. That is a distinction which is clearly to be found in Spinoza, though I do not think that he was ever able to work it out thoroughly, or to satisfy himself about it. For Mr. Lévêque it is central.

Such being the situation, it is perhaps less important to notice that the exposition by which this distinction is reached is not quite impeccable; in particular the distinction between an *idea* and an *image* is, I think, confused through failure to notice that *imaginatio* is not composed of images (which are in the brain) but of ideas of those images. As a result of this failure, we find Mr. Lévêque carried on to the conclusion that the First Kind of Knowledge is not strictly speaking 'knowledge' at all. It is

neither true nor false. What then, I ask, is false, for both *ratio* and *scientia intuitiva* are necessarily true? Spinoza's position is rather that *imaginatio* need not be false, and cannot by itself determine whether it is true or false. Taken for what it is, it is true, but it does not itself know what it is. Falsity consists in taking it for what it is not. Uncriticised *imaginatio* is normally false because it is taken at its face value; that is to say its generating causes are not enquired into. This, it seems to me, yields the true *éclaircissement* of the fact that 'le supérieur éclaire l'inférieur, mais ne le détruit pas' (p. 133). We still imagine the sun to be 'about two hundred feet' away (in Spinoza's example) though we know that it is distant 'more than six hundred of the earth's diameters'. If *imaginatio* is not a form of knowledge at all, the persistence of its fancies is inexplicable; if it is knowledge, and may be true, then we have reason to suppose that its objects have their place, such as it is, in reality. That this is the true direction of Spinoza's thought I have no manner of doubt; for him the dialectic of the understanding does not eliminate the finite modes, nor even their perishing actuality; it puts them in their place.

I have left myself too little space to comment adequately upon the distinction already referred to between the actual content of a finite mode and its eternal intelligible essence, which is also finite. As finite eternal modes the essences take their place in the ontological hierarchy between the mediate infinite and eternal modes and the finite perishing existences. They are known by *scientia intuitiva*, and are therefore individuals; but they are not mere individuals defined by negation and therefore unknowable, they are intelligible or universal individuals. With this exegesis I have not the slightest quarrel; it is recognisable as the doctrine of the Concrete Universal which Bosanquet used to trace to Spinoza. My main point here is directly connected with what I have said above: if we exclude *Imaginatio* as a form of knowledge, by what process do we grasp the content of an actual perishing mode? Both *ratio* and *scientia intuitiva* perceive things *sub quadam aeternitatis specie*. I believe, therefore, that we must assign this work to *imaginatio*, the objects of which we have seen are not necessarily false; and in that case if we also hold, with Mr. Lévêque, that each finite mode has an eternal distinguishable essence, we shall have prepared for ourselves the very pretty problem, not hidden from Spinoza himself, of the relation between the eternal universal finite individuals and the temporal perishing actual individuals. In the *Ethics* the eternal essence of man appears as his 'eternal part'; but the relation as it is for *scientia intuitiva* cannot be a co-ordination of parts; nor on our interpretation can it be that of real and illusory; what it is runs deep into the question of time and eternity, about which other thoughts are possible.

The University of Strasbourg is to be congratulated upon this publication; and though Mr. Lévêque has not yet solved any of the Great Problems of Spinoza-study, he has shown himself well qualified to attempt some of them, and we hope he will make it his business to do so, and to give us the advantage of his guidance.

H. F. HALLETT.

Roberto Ardigo: *L'uomo e l'umanista*. By GIOVANNI MARCHESINI. Firenze: F. Le Monnier, 1922. Pp. iv, 335. L. 17.50.

This book, by a distinguished pupil of Ardigo (1828-1920), is intended to complete two earlier works of the author<sup>1</sup> on his master, who was the

<sup>1</sup> *La Vita e il Pensiero di R. Ardigo* (Hoepli, Milano, 1907); *Lo Spirito Evangelico di R. Ardigo* (Zanichelli, Bologna, 1919).

leading philosopher in Italy at the end of the last century. It is divided into two parts. The first, a biographical sketch, has a good account of the two important incidents in Ardigò's life: the one resulting in his conversion from Scholasticism and the doctrines of the Roman Catholic Church to his positivism, and the other leading him to attempt suicide shortly before his death.

The second part deals with Ardigò's position as historically allied to that of the Humanistic philosophers (Campanella, Pomponazzi, Telesio, Giordano Bruno) of the Italian Renaissance. In this the author takes the opportunity of stating the main points of Ardigò's positivism; which, however, apart from its empirical method, had little or nothing in common with that of Comte or Spencer. It might be termed 'naturalistic monism'. Starting from the psychological and scientific facts—*verum ipsum factum*—and proceeding always by induction the Italian philosopher arrives at the supreme synthesis of the world called by him the *Indistinto* (the Indistinct or the Undifferentiated One), which is his substitute for Kant's Noumenon and Spencer's Unknowable. The Ego though ignorant is not incapable of knowing the *Indistinto*.

The *Indistinto*, by its inherent powers, develops into the *Distinti* (the Distinct or Differentiated Ones or the Many) of which each may be an *Indistinto* in relation to its *Distinti*. Thus calling A the supreme *Indistinto* and a b c d, etc., one of the subordinated series of *Distinti*, a is a *Distinto* in relation to A and an *Indistinto* in relation to b, etc.

It is in the supreme *Indistinto* that all the antinomies, apparent or real, solve themselves naturalistically.

The soul bears in itself the characters of the development of the *Indistinto* into its *Distinti*. It has no mark whatever of metaphysical substance. It is a product of the brain affected, through the sense organs, by the outer world.

In an earlier stage it shows itself as *sensation* or absolute knowledge, and later as reflective or relative knowledge. Thus, though it is a *Distinto* in relation to its sources, the soul or knowledge is an *Indistinto* in relation to its two aspects of *Inner synthesis* (*Autosintesi*) and *Outer synthesis* (*Eterosintesi*), respectively subject and object. The first is the result of the spontaneous grouping of sensations pertaining to the individual, and the second of those pertaining to the outer world. It is thus that the apparent antinomy of subject and object is to be understood and solved. Yet neither of them has really a supremacy over, and neither must be looked upon as antithetical to, the other; both are one and the same product of nature, differentiated here into the outer world and man.

Dynamical development from the *Indistinto* to the *Distinti*, and continuity, are the two eternal laws of the Universe: a dynamism this which, though involving *necessity* (cause and effect) and *chance*, that is to say *indeterminability* of the contingent factors of a given result, works so that each *Distinto*, in so far as it is an *Indistinto*, is an individual obeying its own laws. Hence the reconciliation of necessity and freedom.

Ardigò's psychology is in accordance with his philosophy of nature. Psychological facts and their syntheses as memory, will, reason, etc., are differentiated types of the universal *Rhythm* or life of nature; and taking them as a whole they constitute man as thinking being, whose autonomy is that of the *Distinti* in so far as they are *Indistinti*.

Analogically the same may be said of his ethics. Moral law is a categorical imperative, not because of any transcendental origin or sanctions, but because of its naturalness, moral ideals being the result of a natural need of man as social being.

Nature acts upon man, who reflects such an action altruistically upon society in its two institutions of Family and State. Yet such a reflexion

takes place not mechanically, but by free will. It is this freedom of will submitting to a moral law, which commands and is obeyed for its own sake and without an end to be attained in a life beyond, that gives ethics its character of being naturalistic and yet entirely human. It is due to this naturalness and humanness that we are able to trace the genesis (nomogony), forms (nomography) and science (nomology) of moral ideals such as Good, Duty, Virtue and Justice along with the historical development of man and society.

Ethics according to Ardigo is strictly connected with Politics to which it is for the time being subordinated. Society, as a political organism, enforces with its constituted powers the moral ideals already formed in the conscience of the individual, and, at the same time, through education, example and social sanctions, leads its members onwards towards higher ideals, which will in time replace the first.

Such is, in its main lines, Ardigo's naturalistic monism.

The exposition of it in this book is, however, not free from gaps; and for its full estimation a direct reading of Ardigo's works is desirable.

SALVATORE MESSINA.

*A History of Hindu Political Theories from the earliest times to the end of the first quarter of the seventeenth century A.D.* By U. GHOSHAL, M.A., Ph.D. Humphrey Milford. Oxford University Press, 1923.

Dr. Ghoshal is one of the first to have opened up a branch of Indian speculation which has never been investigated by Western scholars. This omission is not surprising, but what is not so pardonable is the way in which authorities have glibly repeated Max Müller's dictum that India has no place in the political history of the world. Even he must have known that the Law-book of Manu contains a whole book on the duties of kings and their function in the State, and that the Mahābhārata expounds the same subject in nearly a hundred chapters. Besides these are the anti-Brahminical speculations of the Jains and Buddhists, as well as later Brahminical works down to modern times.

The material has recently been extended by the discovery of a work on the art of government attributed to Kautilya, the famous minister of Chandragupta or Sandrocottus, who ruled over most of Northern India, and by his treaty with Seleucus Nicator put an end to Macedonian dreams of Indian conquest. This *Arthaśāstra* of Kautilya, one of the most important works in Sanskrit literature, naturally occupies much of Dr. Ghoshal's attention. It is not mere speculation, but an account of the actual administrative system of the Maurya empire, which was also described by the envoy of Seleucus, Megasthenes, to whom is due most of the early knowledge of India in the West. Indian thought never found it necessary to make a divorce between secular and religious literature. Philosophy is at the same time theology, and even the dramas open and close with a prayer or benediction. But it does not follow that there were no secular ideals, or that government was theocratic. We know as a fact of history that it was not. Though the chief end of man was salvation, three other ends were recognised, virtue, wealth, and pleasure, and it is the end of wealth (*artha*) which has given its name to the art of government, *arthaśāstra*.

The rule of an Indian king was autocratic but not absolute. He had advisers, and among the seven essential elements of sovereignty was the minister. It is significant that among these elements the priest does not appear. Kautilya was himself a Brahmin, but it was not in

virtue of his priestly functions that he advised the king. It is clear from his references to earlier authorities that the science of government had long been studied. His influence, Dr. Ghoshal finds, extended in three principal directions. He founded a tradition of statecraft, he gave a stamp of finality to his conclusions, and he thus made it possible for them to be introduced into the Brahminical law-books.

Dr. Ghoshal's main purpose, however, is to discuss Hindu political theories. These, although often stated in mythological terms, are much more a thinking out of principles than the painful attempts of Locke to prove the historical character of an original compact. There is no such compact in Indian thought. Both the Brahmins and Buddhists have a theory of the election of a king by the people, but it has nothing to do with what Hobbes called the consent "made by covenant of every man with every man". As Rousseau said, the act by which a people is a people is necessarily anterior to the act of choosing a king. For the Hindus this anterior act was not human. They started with the assumption of a divinely differentiated nature of society. The four classes of society were constituted at the creation as part of the primitive nature of things, and one of these classes is the ruling class of kshatriyas. The theory that the king is divine and of divine appointment evidently harmonises completely with this theory of a division of society according to certain functions. It is not identical with the Western theory of divine right, because the king, having essentially kingly functions, had to exercise them in his corresponding duties. The theory of the elective origin of kingship is not contradictory to this, as the election was necessarily supposed to be made from the kshatriya class. In an appendix the author shows the impossibility of drawing a close comparison between Eastern and Western theories of social contract and divine right, but he would have made his case much clearer by expressly stating what these theories were.

Besides giving us the later developments of the Hindu doctrines the author traces them back to their earliest appearance. The hymn in the Rigveda describing the creation of the four classes, even if it is one of the latest, is still the earliest speculation that we have. The divine origin of the king is also an old theory, but the treatment would have been better if it had received fuller discussion. Only one hymn is quoted, that in which king Trasadasyu says "I am Indra, I am Varuna". It is, however, only the view of the commentator that the king is here speaking in his own person; and as another interpretation is commonly held, some justification for this view is wanted. It is a pity to base a good theory on weak evidence. But for what Dr. Ghoshal has given us we are grateful. His book is written in the clearest idiomatic English and in a well-ordered and emphatic style, with a commendable urbanity in dealing with opponents. It will undoubtedly be an aid, as he says, in furnishing the data, from an Eastern point of view, of a true science of comparative politics.

E. J. THOMAS.

*Character and the Unconscious: A Critical Exposition of the Psychology of Freud and Jung.* By J. H. VAN DER HOOP. Authorised Translation by ELIZABETH TREVELYAN. London: Kegan Paul, Trench, Trubner & Co. (International Library of Psychology, Philosophy and Scientific Method). Pp. viii + 223.

This book, while professing to be a critical exposition, is more in the nature of an elementary introduction to the psychology underlying



psychoanalysis. Its professed aim is quite inadequately attained, but as an introduction for the reader who is unfamiliar with the doctrines of Freud and Jung it has much to recommend it, though even from that point of view our praise cannot be unqualified.

The author begins in Chapter I. with an account of the origins of psychoanalysis, and the relation of the theories of Freud to the work of Charcot and Janet. The evolution of the fundamental concepts of Freud's psychology is clearly, though perhaps somewhat superficially, traced. In the following two chapters—The Unconscious in the Normal Mind, and the Development of the Emotions—we have an account of the elements of Freudian doctrine. Curiously, yet characteristically, the chapter on the emotions makes no mention of the important work done in this field by non-Freudian psychologists. Thus we look in vain for some reference to the work of James, of Ribot, of McDougall, of Cannon, and so on. It would be interesting to know the precise sense in which the author understands 'emotion'. No attempt is made to define the word. Yet the author's use of the word is sometimes sufficiently wide and sufficiently unusual to demand some explanation. He takes it for granted that his readers understand what he is speaking about when he says 'emotion,' just as well as they would understand if he said 'river' or 'tree'. This lack of any attempt at definition of terms is a defect throughout. Apart from this defect the whole account is eminently clear and quite readable, but it can scarcely be taken as serious psychology.

The fourth chapter on "The Analytic and the Synthetic Points of View" stands in sharp contrast to what precedes it, as to what follows. Its main aim seems to be a synthesis of the theories of Freud and Jung, but the scope thus given to the author's own thought is taken full advantage of, and the result is an excellent discussion of various fundamental problems involved in the theories of both Freud and Jung, and a valuable contribution to the solution of some of these problems. This chapter gives such psychological value as the book as a whole possesses.

Chapter V. is devoted to a discussion of "Psychological Types". In the Preface the author tells us that the chapter was written before the appearance of Jung's recent book on the same subject, but that certain additions were afterwards made under the influence of that book. Some such history of the chapter might have been deduced from internal evidence. The first part is easily the poorest section of the whole book. The topic under discussion is at first 'introversion' and 'extraversion'. We should be very surprised to meet anyone who got any clear ideas regarding either process, or the difference between them, from this discussion. A more diffuse, indefinite, and jejune piece of writing than this early portion of Chapter V., it is very difficult to imagine. The discussion of Sensation, Intuition, Feeling, and Thinking, which follows, shows a little improvement, but is still indefinite and obscure. The latter part of the chapter is much better, and the analysis of temperaments is in some respects valuable, but the whole is very far from the ideal of a scientific psychology.

Chapter VI. on the "Relation between the Conscious and the Unconscious" is a kind of summing-up. There is not a great deal that is new in it. Freudian doctrines of the nature of the unconscious are closely followed. Indeed the author seems to be unaware of the real difficulties involved in Freud's whole concept of the unconscious. The whole closes on a somewhat mystical note.

We can best express our final estimate of the book by saying that no one who already knows Freud and Jung will get much from it, and yet it may serve very well as an introduction to the psychology of psychoanalysis for those who wish a moderately clear, untechnical, and readable



account of psychoanalytic doctrine. From no point of view can it be regarded as serious psychology, with the exception of the fourth chapter.

JAMES DREVER.

*The Comparative Study of Religions: A Systematic Survey.* By ALBAN G. WIDGERY. London: Williams & Norgate, 1923.

The position from which Mr. Widgery has lately retired of Professor of Philosophy and the Comparative Study of Religions in the Maharajah Gaekwar's College at Baroda gives to his work on the latter subject a peculiar value; for it afforded him opportunities which few students of that branch of learning enjoy of studying at first hand the actual practice of religions other than that in which he was brought up. On the other hand, the dedication of this book to Dr. V. H. Stanton and the tribute of gratitude to him in the preface sufficiently indicate that we have not here to do (as so often is the case with such students) with one whose knowledge of the faith of his fathers is little less external than that which he possesses of any other.

Mr. Widgery is content (rightly, as it seems to me) to regard 'religion' as indefinable; and to look for 'a satisfactory classification of religions' as obtainable, 'if at all, only as a result of the comparative study of religions'. Of the old distinction between natural and revealed religion, the recognition of which long stood in the way of this study, he justly observes that 'religious knowledge from the side of man is natural, and from the side of God is revealed' and that in the place of the distinction in question 'modern thought insists upon the knowledge of God obtained through external nature on the one hand, and that obtained through the moral and spiritual life of man on the other. And as in earlier times Revealed Religion was thought of as superior to Natural Religion, so now the knowledge of God which comes through human moral and religious experience is held to transcend that derived from the world of nature.'

The present volume 'endeavours to represent with scientific impartiality the various aspects of the religions concerned, though always with the desire to give the most favourable view of the details, to whatever religion they belong'. Mr. Widgery rightly insists that 'the elements of contrast are often at least as important as those of similarity. They are in some instances more important in that they are the aspects in which one religion is superior to another'; and that 'if this requirement is remembered in its fullest implication, it will not be possible to contend, as did Mr. E. Clodd, that every advance in the Comparative Study of Religions leads to the conclusion that the component parts are the same and the variety due to the distribution of the parts'. There are some valuable observations in the Introduction on certain of the characteristic differences between the great religions of the world. It is specially noteworthy that, in Mr. Widgery's judgment, 'in Christianity alone is there any marked development of the "pastoral" and of literature on its various aspects'. There is an interesting and, so far as I know, original remark on page 25 that 'more perhaps than any other source the comparative study of religious music should give us an appreciation of the intimate and dominant feeling tones, and attitudes of the religions. The comparison will concern itself not merely with the differences in kind, but also with the relative amount of use which is made of music.' The book is illustrated by pictures of sacred events, holy places, and religious ceremonies. Misprints are unfortunately many, but this is doubtless due to the circumstances explained on page xix. This almost

purely descriptive work is, we are led to hope, to be followed by another of more properly philosophical interest; for Mr. Widgery tells us that 'the discussion of the significance and the relation of these facts and of the various theories which have been propounded with regard to religion is reserved for another time and place'. We shall look forward to this promised sequel.

C. C. J. W.

*Il Diritto Sperimentale.* By ROBERTO VACCA. Torino: Frat. Bona, 1923. Pp. 263. L. 25.

This work, by one of the foremost among living Italian jurists, is the first systematic investigation of the possibility of constructing the science of law on an empirical basis and by empirical methods. The author lays down the rules of method, which result from a critical determination of the domain of law and its independence of any philosophical, economical or sociological theory. Yet an experimental science of law is not, according to the author, to be understood as such that it must do entirely without the work of other sciences; for the results of these may eventually be of great help for its work of conclusive synthesis. And still less should one think of putting aside all the results achieved by the historical development of the science of law, though built up on metaphysical ground and by *a priori* methods.

An inductive science of law, the author maintains, may be constructed if (1) we are content to start without any definition of law, accepting for the time being its meaning as commonly understood; if (2) we take the elementary facts of our science to be human actions in their tendency to form, establish and enforce a *uniformity* of behaviour of the individuals and groups of individuals constituting a community, in their mutual relations; if (3) we study only the *external* causal connexions of human actions, apart from psychological processes as their cause, and from any ideal given by philosophy or any other science as their end; if (4) such elementary data are regarded as susceptible of quantitative but not qualitative measurement; and if (5) we acknowledge as laws of human actions only those having the character of natural laws.

From the empirical point of view there is and can be no absolute idea of Law, Justice or Equity, unless we speak of *absolute* uniformities of behaviour and their derivatives as observed in time and space.

Uniformities of human behaviour and their classification constitute the backbone of our author's constructive theory. From the juridical point of view in civilised communities we find two well-distinguished classes of behaviour: the homogeneous and the heterogeneous. The first are exhibited in the relations to one another of individuals or groups belonging to the same social class; the second in the mutual relations of individuals or groups belonging to different classes. Contrary to the doctrines of philosophers and jurists who, assuming social equality, reduced the two kinds of uniformities to one, the author argues that neither kind can be reduced to the other, and it is due to this irreducibility to one another that we can explain the existence of different forms of actual Law (Public, Private, International, etc.) depending on the twofold classification. The respective characters of the two kinds discriminate them and indicate clearly their mutual irreducibility: the heterogeneous uniformities involve compulsion exerted by superiors or dominants over inferiors or dominated and, consequently, will on the side of the first, and ordered compliance on that of the latter; whereas the homogeneous involve agreement of self-limiting free-

dom amongst equals. Hence the origin and distinction of the forms of codified law.

What has the greatest importance for an empirical science of Law is the investigation of the formation and development of the uniformities. The permanent factor to be reckoned with in the formation of uniformities is the natural tendency of man as social being to be uniform. As to the development of a uniformity we must observe (1) its gradual formation up to the stage when it is, by general consent, constituted and claims compulsorily universal observance from all the individuals of a community; and, once constituted, (2) its progressive development into a series of stages up to, so to say, the saturated one, when the series comes to an end, and the series of a new uniformity takes its place. There is no development from the first to the second series, which is to be looked upon as a super-structure in relation to the former.

These are the main points of this learned book, which may make an epoch in the history of the science of law. In the last chapter the author deals with the practical application of the theoretical results of his very important analysis.

SALVATORE MESSINA.

*The Theory of Ethics.* By A. K. ROGERS. New York: The Macmillan Co., 1922. Pp. vi, 197.

The first half of this book endeavours to analyse the most fundamental concepts in ethical theory, and the second half deals with questions arising out of this analysis. On the whole, the author seems most concerned with the earlier portion, and so I shall try to give a short account of it.

Inquiring, in the first place, what we mean by goodness, Mr. Rogers maintains 'that goodness is no specific quality inherent in an object but the outcome of some distinctive attitude which we adopt toward such a quality'. The assigning of goodness is an act of contemplative recognition implying a secondary attitude of intellectual favour or approval: and I 'approve' anything in so far as the *thought* of it is pleasant. In the second place, he sets forth the view that 'any sort of fact approved as good will be found to be of the sort that involves the feeling of pleasure or satisfaction in experience'; and this is not because he is a psychological hedonist (for he is not) but because he considers that an empirical survey of human good shows that the quality of pleasure is always present in it and that no other quality is constantly there. In the third place, turning to morality proper, he deals with the 'sense of compulsion' which makes us believe that we 'ought' to prefer one end to another. This depends, he says, not on a simple approval or judgment of 'goodness' but upon a judgment of 'betterness': and the additional factor involved is a restrictive feeling, an ultimate feeling of distaste which shows itself most noticeably as a repugnance to what is 'trivial'. Our restrictive feeling in this case is 'objective,' however, (at least in any decent specimen of the species man), because it is rooted in persistent facts of human nature.

If I could be pardoned for speaking impudently, I should say that Mr. Rogers has a genius for asking the right questions and for giving the wrong answers. And, seriously, there does seem to be something wrong. The first answer, I think, is doubly mistaken. It is possible, surely, to approve (say of an execution) with nothing but sorrow in one's heart; and even if this were false, the definition would still seem to be faulty, since it includes cases which are not approval at all. Anyone who enjoyed the process of introspection, for example, would experience pleasure

in the contemplation of certain *thoughts*, but he need not therefore approve them. In fact, he frequently would not.

The author's second answer is a most restrained and apologetic piece of hedonism, but it does not seem to be free from the most serious of Mill's difficulties—the clash of dignity with satisfaction. A hedonism which ‘prefers defeat to success which degrades us in our own eyes’ or is ‘unable to stand the test of the reflective quantitative judgment’ (p. 143) is surely odd. Yet the difficulties of this answer are small compared to those of the third. In Mr. Roger's view, the ‘ought’ has authority; but he gives no reasons for this opinion. According to the letter of his pages, it is only a feeling which curbs our desires. But why ‘ought’ it to curb them? Let us grant that it is secondary, and they primary: and even that it is disposed to accompany reflexion. Still it is but a feeling among other feelings and is no more obligatory than a sublimated (or unsublimated) phobia. Its status, too, is ambiguous. For how can the comparative ‘better’ have a status intrinsically different from the positive ‘good’?

The concluding chapters deal with freedom, principles, their application, virtues, and rights. They emphasise dignity, un-self-centredness, reflexion, and stability, always amiably and often shrewdly. Their standpoint is individualistic on the whole—and almost exclusively masculine. I have no space to deal with them, however, and so must leave a very likeable and honest little book. I should like to add one comment, however. Is Ethics really concerned with *human* good, and with nothing else? Has it not rather to show us, who are men, what is *good*?

JOHN LAIRD.

*The Meaning of Meaning.* By C. K. OGDEN AND I. A. RICHARDS. With an introduction by J. P. POSTGATE, and supplementary essays by B. MALINOWSKI and F. G. CROOKSHANK. Kegan Paul, Trench, Trübner and Co. Pp. xxxi + 544. 16s.

The principal original idea in this book is a new analysis of “reference,” the relation between a thought and that of which it is a thought, in terms of causal relations. The case chiefly considered is that in which the perception of an event A causes the expectation that it will be followed by an event B which has followed it in the past. The theory is that, by saying that a mental process is an expectation of an event B, we mean that the mental process owes some of its characteristics to the recent occurrence of an event of some kind A and to the occurrence in past experience of events A each followed by an event B. This interesting theory deserves further development, but we are only given sketchy and unconvincing indications of how it might be applied to other cases.

In a situation of the kind described above our authors say that the event A is “interpreted” as a sign of an event B; and in terms of “interpretation” they construct the following theory of perception. “What is directly apprehended is a modification of a sense organ, and its apprehension is a further modification of the nervous system.” By interpreting modifications of the retina we arrive at visual cones and by interpreting these at material objects. The authors do not seem to have seen any of the obvious objections to such a theory; nor even that, if, as they say, we only interpret one thing as a sign of another when such things have occurred together in our experience, and we only experience modifications of our sense organs, we cannot by interpreting these reach anything except other modifications of our sense organs.

But even if these discoveries are valueless, this book contains a lot of amusing writing on the use of words by plain men, savages and philosophers. The philosophers of all schools are very severely treated and for the most part deservedly; their use of the word "meaning" is shown to be particularly scandalous. But some of the criticisms suffer from insufficient understanding of the difficulties which their victims are trying to solve. Mr. Ogden and Mr. Richards do not see the existence of logical problems, and propose to replace philosophy by the "science of symbolism" and psychology; nevertheless they have made useful summaries of various theories of symbolism, and the excellent appendix on C. S. Peirce deserves especial mention.

Our authors stress particularly the distinction between the symbolic and emotive functions of language, believing that "many notorious controversies in the sciences can be shown to derive from confusion between these functions, the same words being used at once to make statements and to excite attitudes". This distinction seems to me of great importance, and in the emphasis laid on it lies the chief value of this book.

Dr. Malinowski explains the value of the ideas of Mr. Ogden and Mr. Richards in understanding primitive languages, and Dr. Crookshank "the importance of a theory of signs and a critique of language in the study of medicine".

F. P. R.

*Behaviorism and Psychology.* By A. A. ROBACK. Ph.D., University Bookstore, Cambridge, U.S.A., 1923. Pp. 284.

Dr. Roback attempts in this work "first to give a comprehensive survey of the whole behavioristic system, then to examine the validity of its basic principles, and finally to test its workability in practical life". These topics are successively dealt with in the first three parts of the volume. In a fourth part—somewhat misleadingly entitled "Prospective"—the arguments against behaviourism are recapitulated and the present position of Psychology and the behaviouristic movement is reviewed. A fifth section is added containing a useful (though not consistently relevant) bibliography of 238 items, and appendices on Intelligence and Intellect, the definition of Psychology, and the classification of behaviouristic schools.

The chief limitation to the value of this rather ambitious work lies, perhaps, in the failure clearly to distinguish and separately discuss the fundamentally distinct issues of the behaviouristic controversy. In the opening chapter the author defines Behaviourism as the doctrine which "reduces all psychology to the study of movements of limb and muscle or gland, more particularly movements of the body as a whole". His subsequent exposition, however, suggests that this "reduction" can be effected in various ways. Some behaviourists simply deny the existence of mental phenomena (as ordinarily understood); others, admitting their existence, believe them to be definable in terms of behaviour. There are yet others who admit both that there are mental phenomena and that they are not definable in terms of behaviour, but assert that such phenomena are not amenable to scientific investigation or are insufficiently interesting to warrant it. In Dr. Roback's exposition these alternative doctrines are not always clearly and explicitly distinguished and the reader is left to judge for himself against which particular form of behaviourism the author's arguments are directed. In general, it appears that Dr. Roback regards the more radical forms of behaviourism as being beyond argument. The existence and irreducibility of mental phenomena

are throughout assumed, the author's main concern being to show that these phenomena are of sufficient interest for science to deal with and that if traditional psychology has dealt with them inadequately Behaviourism has been, and is likely to be, no more successful. In this connexion an apparent, though perhaps not fundamental, inconsistency occurs in Dr. Roback's argument. In the earlier part of the volume he appears to hold that a pure science of behaviour is impossible ("The concept of Behavior is too general to afford us the foundation for a separate science"). Elsewhere, however, a science of "Behavioristics" is contemplated which as a "co-ordinating science" would, it is asserted, serve a useful purpose. This positive claim of the behaviourists has a greater plausibility than their strictures upon traditional psychology. It is therefore to be regretted that the polemical nature of Dr. Roback's work has prevented him from devoting more attention to this aspect of the question, particularly as even the destructive part of his argument does not appear to be conclusive against some important forms of the theory. The truth of the matter would seem to be that the fundamental issues of the behaviouristic controversy are of a logical and methodological nature, and these the psychologist, as such, is not as a rule prepared to discuss otherwise than in a somewhat cursory fashion.

C. A. MACE.

*The Elements of Scientific Psychology.* By KNIGHT DUNLAP, Professor of Experimental Psychology in the Johns Hopkins University, Baltimore. London: Henry Kimpton, 1922. Pp. 368. Price 18s. net.

In his preface Prof. Dunlap says that "In introducing the student to the modern science of psychology, it is necessary to depart definitely from traditional formulæ and traditional conceptions in so far as these formulæ and conceptions no longer represent the facts with which psychology has to deal". This, in the light of the subsequent treatment, appears merely to mean that psychology must now be considered as a thoroughly experimental science. But this view is hardly maintained throughout. The Introduction; the chapter on Sense Perception; the discussion of Some Details Concerning Sensory Characters; that on Some Simple Relations of Sense Data; the consideration of Reaction and Consciousness; much of the section on Affective Experience, and the remarks about The Empirical Self or "Me" are all very highly theoretical and general in their nature. For the rest the book covers most of the ground of experimental work in psychology. It is interesting and clear, although the reasons for the order of treatment adopted are not always apparent. Thus the chapters on The Bodily Mechanism, and Instinct and Habit, would seem more in place at the beginning of the book than in the middle. The book is beautifully printed and has a number of most excellent illustrations. While it cannot be said that this is the ideal text book for the student of experimental psychology it is a good one, and may safely be recommended to any student who is prepared to test the accuracy of the statements made by experiments on his own account.

F. C. B.

*Les Jugements Modaux chez Aristote et les Scolastiques.* By STANISLAS DOMINCZAK. Louvain, 1923. Pp. 121.

A careful and learned exposition of the doctrine of modal propositions and their opposition and conversion as laid down in chaps. 12-13 of the *De*

*Interpretatione*, with special reference to the further developments of Aristotle's doctrines in Albert the Great and St. Thomas. The theory of "modals" has generally been comparatively neglected in post-scholastic times and Mr. Dominczak's essay is likely to be of real value as a convenient work of reference to the student of the history of logic who is anxious to know the lines on which a rather arid topic was handled by the schools. The author promises a future work which will illustrate the importance of a correct understanding of the logic of "modals" for moral and theological science.

A. E. T.

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## VII.—PHILOSOPHICAL PERIODICALS.

THE BRITISH JOURNAL OF PSYCHOLOGY. Vol. xiii., Part 3, January, 1923. **Dr. Olive A. Wheeler** in 'An Analysis of Literary Appreciation,' gives an account of experiments on the appreciation of poetry by a group of University students. In one experiment in which students were asked to note any imagery that occurred while they listened to the poems read, it was found that, in the majority of cases, the images experienced increased the enjoyment of the poem. In a later experiment in which efforts were made to obtain imagery during the reading of the poem, the enjoyment of the poem was lessened. Too much imagery is said to interfere with the "duration" factor and to spoil the rhythm of the poem which is essentially related to the psychological units of thought. The writer concludes in reference to the teaching of poetry that "The method of exposition is too critical and analytic, and therefore disturbs the duration and imagery factors. The methods of silent reading and the reading aloud of the poem by the pupils pay too little tribute to the rhythm factor; while the method of recitation (or repetition) frequently results in the sacrifice of the psychological rhythm to the metrical measure. What seems to be needed, at least for poetry in which imagery plays a large part, is an image formation method in which justice is also done to the duration and rhythm factors in appreciation." **A. J. Cubberley** in 'The Effects of Tensions of the Body Surface upon the Normal Dream,' describes a series of over seven hundred experiments on dreams, in nearly all of which touch sensations, caused usually by a patch of gummed paper placed on some part of the body, revealed their influence on the development of the dream. The writer concludes that for the dreams of normal persons, the Freudian interpretation is unnecessary, though he admits the value of the use of dream analysis as an aid to the diagnosis, where a positive disturbing factor is known or suspected to be present. **Frank Smith** in 'Bilingualism and Mental Development,' gives the results of an investigation carried out in Welsh schools over a period of three years, in which scholastic and psychological tests were applied to discover the difference between bilingual and monolingual children. The writer concludes as follows: (1) Monoglot children, between the ages of 8 and 11, make better progress than bilingual children in their power of expression, their choice of vocabulary, and their accuracy of thought. So far from bilingualism being an "intellectual advantage," it seems to be exactly the reverse, at least under the present organisation of schools in Wales. (2) This superiority is revealed more consistently by some tests than others, but if the results obtained in four schools are summed and averaged, the monoglot's superiority is established in each of the four tests. **Eric Farmer** in 'The Interpretation and plotting of Output Curves' indicates the various kinds of changes which may be brought about in the industrial work curves as the result of the introduction of a new method: (1) The output curve may remain the same shape but be on a higher level. In other words a greater output has been obtained with the same amount of effort. The fatigue effect of the day

is the same, though presumably the effort required for each unit of output is less. (2) The output curve may be practically on the same level but of a far better shape. When this takes place we may assume that the operation has not been made easier to perform in the sense that it can be done more quickly, but that the cumulative effect of its constant repetition is less fatiguing than that of the original method. (3) The output curve may be on a higher level but of a worse shape. If this takes place we may assume that the increase in output is due to a quicker method of working, but that this new method is more fatiguing to the worker than the original method. (4) The output curve may be on a higher level and also of a better shape. If this takes place we may assume that the increase in output is due to an easier and quicker method of working and that the new method is so much less fatiguing to the worker, that he suffers less fatigue during the day although he is repeating the operation an increased number of times. A curve in which there is a continual drop through the day is an "unhealthy" one. Other articles are: 'A Further Note on the "Theory of Two Factors"' by **C. Spearman**; 'Hand and Ear Tests' by **Hugh Gordon**; 'Some Observations on Contrast Effects in Graded Discs,' **Robert H. Thouless**; and 'The Constancy of the Intelligence Quotient' by **P. L. Gray** and **R. E. Marsden**. Part 4, April, 1923. **Mary Whiton Calkins** in 'McDougall's Treatment of Experiences' criticises McDougall for his 'infidelities' to the conception of the experiencing subject in spite of his affirmation of it. In a footnote the writer admits that McDougall has made amends in his latest book and that her article may now best be described as an appeal from McDougall, writer of 'An Introduction to Social Psychology,' to McDougall, writer of the 'Outline of Psychology'. **W. H. Winch**. 'The Transfer of Improvement in Reasoning in School Children.' On the basis of tests in logical reasoning fifty-eight children were divided into two groups of equal average capacity. One group was practised in problematic arithmetic for a period—both groups having previously been tested in problematic arithmetic. Both groups were then tested in logical reasoning and problematic arithmetic. The group practised in arithmetic showed a much greater improvement in logical exercises than did the other group. **S. Bowie**. 'An Application of American Army Intelligence Tests.' American Army Tests Alpha were applied to senior boys in a Grammar School and the following correlations with the University of Durham School Certificate were found: (1) The first eight in intelligence order all passed successfully; (2) The last six in intelligence order all failed; (3) The middle portion (9th to 19th) fluctuated considerably. It would seem from this that the tests do differentiate the markedly superior boys, and also the markedly inferior ones, but that they are of little assistance in arranging the "middle class". Three of the four successful boys in the Durham matriculation appear among the first four in the intelligence order. **Charles Fox** in 'The Influence of Subjective Preference on Memory' describes experiments in which sonnets were learned by the "whole" and "mixed" ("part and whole") methods respectively. No appreciable difference was found according to method. But on analysing results according to sonnet preferred, it was found that influence of preference was greater than influence of method. **A. Wohlgenuth** in 'The Influence of Feeling on Memory,' gives a criticism of earlier experiments on the remembering and forgetting of pleasant and unpleasant experiences, and an account of a new set of experiments in which nearly 700 children recorded pleasant and unpleasant experiences of a preceding holiday. The percentage of each type (pleasant and unpleasant) recalled about ten or fourteen days later was reckoned, and it was found that 40 per cent. of pleasant memories had

been forgotten and 38 per cent. of the unpleasant memories, from which the author concludes that there is no difference whatever between the two feeling-tones, pleasure and unpleasure, in their influence upon memory. Other articles are: 'Vocational Tests and Typewriting,' **B. Muscio** and **S. C. M. Sowton**; 'Experiments of the Estimate of Duration,' **Mary Sturt**; 'The Effects of Deprivation of Oxygen upon Mental Processes,' by **J. P. Lowson**; and 'A Preliminary Note on a New Method of Determining the Phase Effect in the Localisation of Sound,' **H. Banister**.

**JOURNAL OF PHILOSOPHY.** xx., 17. **J. R. Kantor.** 'What are the Data and Problems of Social Psychology?' [To determine how an individual becomes a member of a particular group, how they interact, how do different groups affect him, how do psychological and non-psychological influences compare, and how do psychological processes affect group phenomena.] **N. H. Aderblum.** 'A Perspective for the Study of Jewish Philosophy.' [Jewish philosophy has been studied too much for its relation to Christianity and the outer world, whereas it should be related organically to the life of the people.] xx., 18. **M. R. Cohen.** 'On the Logic of Fiction.' ["Since all developed sciences depend upon comparing the consequences of rival hypotheses, . . . the realm of valid inference is wider than the realm of factual existence" and the logic of fiction belongs to it. To fiction belong (1) the figurative truth of metaphor which is earlier than expressed analogy and indispensable alike in science and in practice, though it may generate fallacies, (2) the use of conventional untruths, euphemisms, and other 'ceremonial expressions,' (3) the use of abstractions which are not necessarily unreal because their application always involves a *salto mortale*, (4) constructions and hypotheses which are not to be regarded as self-contradictory because they seem contrary to fact or because their subject matter cannot be directly proved or disproved.] **S. P. Lamprecht.** 'A Note on Professor Dewey's Theory of Knowledge.' [Urges that Dewey should not take knowledge in so narrow a sense as to rule out our saying that we have knowledge about the past, and can mean the past, merely because the verification of such knowledge must always be present or future.] xx., 19. **R. F. A. Hoernle.** 'In Memoriam: Bernard Bosanquet.' [Personal reminiscences.] **H. L. Hollingworth.** 'Symbolic Relations in Thinking.' [After arguing against sensationalist accounts of the consciousness of relation, concludes that "relations may be asserted in at least four ways," (1) by 'perception' or immediate apprehension, (2) by judgment on the basis of another relation immediately perceived, (3) by inference from some datum not itself a relation, (4) by belief, or authority at second hand.] **H. B. Smith.** 'In Reply to Mr. Lodge.' [Who reviewed him in xx., 13.] **O. O. Norris.** 'The X and the Y of Psychology.' [Are the psychical and the physical, and what is needed is an objective conception of quality. Now "the natural datum of which the psychical is an aspect or character" is . . . "an event or occurrence" and this is "an impact or collision between two natural masses". It follows that "the quale of the impact has no influence or efficacy upon its quantum". Thus "image and idea . . . must be denied efficacy and so also must sensation, emotion and feeling. In their full reality these also are acts . . . for the psychical is not an existential, but a functional category." ] **W. H. Sheldon.** 'Is there Material Substance?' [Does the electrical theory of matter imply the scrapping of the notion of material substance as a solid stuff occupying a volume? Though it might seem that electromagnetic inertia had accounted for the mass of the electron (or proton) and that its mass had become a function of velocity, yet it

retains the two positive properties. It has 'integrity,' i.e., moves as a whole, in unity of behaviour. It has 'exclusiveness' and resists fusion, and its "atomicity is the empirically verified difference between Matter and Space".] Contains also a long review of A. K. Rogers's *What is Truth?* by H. W. Schneider. xx., 21. **A. Weinberg.** "A Critique of Pragmatist Ethics." [The pragmatic method fits all dilemmas other than those specifically called moral; for these demand an intrinsic evaluation. "It is no more a moral method than the Einstein theory of relativity." It is also otherwise misleading: from the fact that every situation *may* be unique, it does not follow that it *is*. Can 'judgments of practice' be equated with moral judgments? Are moral judgments really 'logical' in the sense of 'reasonable'? Is the *consequence* rather than the *disposition* the primary subject of moral judgment? What about moral values which have nothing to do with action?] **O. O. Norris.** "The X and the Y of Psychology, II." [Declares that "if consciousness is constituted of the qualia of mass impacts," and if isomeric amino-acids colliding in paired masses are 17 in number, there can be 136 different kinds of qualia, and that 'the so-called sensations' are "synoptic functions of afferently-directed currents," while the emotions are "functions of the associational-efferent plane of shifting gearage," and pleasure is to be connected with "the cranio-sacral division of the autonomic system," and pain with "the thoracico-lumbar division".] xx., 22. **A. E. Avey.** "Immediate Inference Revised." [On the assumption that "it is possible to formulate a doctrine of Immediate Inference which does not presuppose that the terms involved have some existence in the universe".] **G. P. Adams.** "Activity and Objects in Dewey's *Human Nature and Conduct*." [Holds that it contains two tendencies, one realistic for which objects endow activities with meaning, the other humanistic and pragmatic for which objects derive their meaning and content from the activities and habits of the organism.] xx., 23. **J. Dewey.** "Values, Liking and Thought." [Replying to D. W. Pratt in xx., 5, whose use of ambiguous terms he complains of, Dewey points out that "literally there are no such things as values" but only valuable and valued things. "Calling a thing a value is like calling a ball struck a hit." So our liking does not 'constitute' the things liked. Moreover judgment or thought is essential to any liking that is not merely animal appetite.] **J. R. Mattingby.** "Contribution to the Theory of Propositions." ["A proposition is a group of symbols . . . the meaning of the proposition is the whole of the meaning of its parts. The meaning of a symbol is the set of the not more than  $x/2$  disjunctive meanings of its modal ingressions where  $x$  is the number of the said modal ingressions."]

REVUE DE PHILOSOPHIE. July-August, 1922. **E. Peillaube.** 'Dispersion de la Vie intérieure et Médication psychologique—II. Thérapeutique du Dr. Freud.' [This is an adverse criticism of Freud's theory and practice on the lines of Pierre Janet, and of Régis and Hesnard. The 'repressive tendencies' are not the cause of neurosis; the 'symbolism of symptoms' is an illegitimate generalisation from some correct observations; the Freudian Unconscious self does not exist; Pansexualism is a creation of Psychoanalysis; and the practice of psychoanalysis as taught by Freud is inefficient and dangerous where it differs from practices already known.] **G. Voisine.** 'Une figure de Spirituel: Mgr. Gay.' [A continuation of the study of the life of Mgr. Charles Gay, treating of the fundamental characteristics of his spirituality (*aimer, adorer, appartenir*) and of his mystical life and gift of higher prayer.] **Pedro Descogs.** 'La théorie de la Matière et de la Forme et ses fondements (6<sup>e</sup> et dernier article).' [In this concluding article the author develops

the dynamical part of his metaphysical argument to establish the existence of prime matter and substantial form. This part of the argument is drawn from the inertia and the activity of material bodies. The inertness is the same in all bodies, the activity differs with different bodies. Though the same complete substance is at once active and passive, those properties are in themselves so opposed that they can only be due to principles within the substance which are really distinct, the one being passive and undetermined, the other active and determining. The same argument is also drawn from the distinction between 'quality' and 'quantity'. These are again irreducible and must be due to two principles, one 'qualitative' or determining, the other 'quantitative' or determined. Objections are considered and also the relations between hylomorphism and modern science. Hylomorphism is said not to be in contradiction with modern scientific theories, even when these are opposed among themselves, so long as they do not contradict 'common sense,' as is said to be the case with those theories which reduce inertia entirely to an energy (active) phenomenon. Though we think that this dynamical argument is very much the weaker part of his metaphysical argument, as it is not really shown how activity and passivity in this case demand two really distinct principles—identical with prime matter and form—yet the last section of the article is most interesting and suggestive and concludes a very valuable series of articles on an important and difficult question.] September-October, 1922. **F. Mentré.** 'Pierre Duhem : Le Théoricien (1861-1916).' [First instalment of a notice of Duhem, treating of him in the character of a 'philosopher of science' and a historian of scientific theories, where he appears as a vindicator of the importance of French scientists and of medieval thought. "What Duhem attempted was the history of ideas and theories."] **H. Colin.** 'Les transformations expérimentales des êtres vivants.' [While maintaining the truth of evolution he points out that no system of transformism of species has ever been experimentally proved and offers reasons for supposing that the conditions are now different to those in existence when evolution was taking place on a large scale. This would account for the failure of our experiments.] **G. Voisine.** 'La durée des choses et la relativité.' [An article relating to Bergson's recent *Durée et Simultanéité*. Having given a synopsis of Bergson's criticism of the theory of relativity, he disagrees with the principle on which that criticism is based, *viz.*, that real time is a duration of consciousness, from which B. deduces that the relativity of time is fictitious because it does not affect consciousness. P. Voisine, identifying time *a parte rei* with change, sees no difficulty in supposing a different time for each thing. Rather he would find it difficult to demonstrate that there was a unique time. However the theory of relativity treats (or should treat) not of real times but of the measures of time, leaving out of account the realities measured. A mind which could embrace them all together might bring them all into one scheme, but the human mind is not of that kind.] **E. Bruneteau.** 'Sur l'histoire de la spiritualité au XVII<sup>e</sup> siècle, M. Henri Brémond.' [An account of the last three volumes of Brémond's *Histoire littéraire du sentiment religieux en France* : t. III. l'École française, t. IV. l'École de Post-Royale, t. V. l'École du Père Lallement et la tradition mystique dans la Compagnie de Jésus.] November-December, 1922. **A. Valensin.** 'Notes de Philosophie.' [Summarises in note form the line of argument by which the scholastic (Thomist) system of philosophy can be deduced from the three old fundamental notions of *Act* and *Potency*, *Matter* and *Form*, and *Essence* and *Existence*.] **G. Voisine.** 'Le système de la Matière et de la Forme. À la recherche d'une preuve métaphysique.' [This is a paper read to the *Société philosophique Saint-Thomas d'Aquin* occasioned by Père Descoqs' articles in this *Revue*. The author agrees with Père Descoqs in rejecting

the attempts to use a 'physical' proof for the theory of Matter and Form and states that these attempts as at present made are opposed to Aristotle's proof from substantial change. P. Descoqs' second 'metaphysical argument' he apparently rejects for the reason that inertia (passivity) and activity do not necessarily presuppose two really distinct principles. To the first metaphysical argument he assigns very high probability but not absolute certitude since 'to argue from the notion of continuity to that of aptitude for real and physical division' might be 'perhaps a *petitio principii*'. Indeed the ultimate atom whatever it is, is ex-hypothesi not physically divisible. The proof which appeals to him is another form of the continuity proof. The root notion of Aristotelian philosophy is that of Form or Idea (*εἶδος*). The ultimate atom incorporates an Idea, it has its one nature and species. Extension adds nothing to the specific determination but imprints upon it a certain modality by which it becomes reproducible. If we fix any point in the extended body the idea is there incorporated in its entirety, but at the same time we isolate that point from the rest of the body. We could do the same for any point; therefore extension produces in the thing a fundamental indeterminateness, the cause of which must be sought outside the typical Idea. Hence *materia prima*.] **F. Mentré.** 'Pierre Duhem, Le Théoricien (*suite*).' [As a 'philosopher of science,' Duhem rejected the atomist or mechanical conception of Physics which attempts to deduce experimental laws from metaphysical principles. He also rejected the inductive conception of English physicists. According to him the English mind is 'ample' but weak, because although it has the faculty of embracing complex groups of concrete objects, it is unfitted for abstract and general ideas. Duhem considered that qualities were not reducible to mere quantitative differences. He propounded a 'qualitative' physical theory, and thought that general thermodynamics was the nearest approach to the ideal system of physics. With the relativity theory he profoundly disagreed, stating that the justification of Maxwell's equations abounded in contradictions, and the theory itself was opposed to common sense. The latter is also the opinion of the writer of the article.] **E. Bruneteau.** 'Sur le Mensonge du Monde de Fr. Paulhan.' [Review of the book, the substance of which the writer compares with the ontology of St. Thomas.] 'Société philosophique Saint Thomas d'Aquin. Séance du 15 novembre 1922.' [The report of this meeting which was on the proof of the theory of Matter and Form concludes with a sort of minority report by Abbé Gossard who still holds that the theory is to be proved from modern chemical data.] January-February, 1922. **J. Vialatoux.** 'La connaissance de la finalité.' [A criticism of the views of M. Goblot. M. Goblot restricts the notion of finality—it is a scientific hypothesis verifiable in, e.g., biology. Such a restriction is inadequate, because the very presupposition of science, as of knowledge itself, is *order*, and order implies finality.] **M.-S. Gillet.** 'Les faits de la conscience morale.' [A sketch of modern conceptions of conscience, with special reference to Lévy-Bruhl and Durkheim. Criticism is to follow in the next article.] **E. Tavernier.** 'La disparition de la morale dans l'enseignement de l'Université.' [Since the divorce between ethics and religion and metaphysics, the claims of morality have been less and less supported in University teaching. Conscience and moral sense gave way before the attacks of Guyau and the Sociological school. The remarks on Guyau and modern writers such as M. Parodi and M. Piffault are especially interesting.] **H. Dehore.** 'Note sur la notion du fait psychologique.' [A valuable discussion of consciousness and the Unconscious. The writer finds no compelling evidence for the existence of the Unconscious, because the theory of habits and dispositions can account for the facts.] March-April, 1923. **A. d'Alès.** 'La liberté des mystiques.' [An interesting



examination of the apparent contradiction between the submission and obedience which the mystic professes, and the actual liberty which he exercises—his director appears to obey him (or her) rather than he (or she) the director. The solution is found in the guidance of the director by the Holy Spirit which gives the true "liberty" to "the sons of God".]

**Dr. le Bec.** 'Le supplice de la croix.' [A description from a medical point of view of the physical sufferings of Our Saviour in His Passion. The meaning of certain phenomena described by the Evangelists is discussed.]

**P. Teilhard.** 'La Paléontologie et l'apparition de l'homme.' [The writer speaks as a paleontologist—an attitude to which the Editor calls attention in a note—and traces the morphological continuity in the series of animals from the Insectivora to man. To him it is obvious that there is a material connexion linking together this series; but that does not explain the origin of each member, least of all of man with his spiritual soul.]

**J. Maritain.** 'La vraie notion du syllogisme.' [A chapter from the second volume of the writer's *Eléments de la Philosophie* which is now in the press. His thesis is that the force of the syllogism lies not in the passage from universal to particular but in the identification of two terms with a third term.]

**E. Bruneteau.** 'Propos de philosophe sur un historien.' [An appreciative account of M. Brémond's latest book: *La Conquête mystique*.] May-June, 1923.

**E. Peillaube.** 'Enquête sur la convenance des études philosophiques pour les jeunes filles (Premier article).' [The results of an enquiry, instituted four years ago, into the suitability of philosophical studies for young women and girls. The questionnaire is given. It was addressed to the students themselves, to their professors and directors, to the clergy, to the relations of the students and to medical men. The replies of the professors, doctors and clergy are summarised in this article. Only one of each calling was opposed to such studies; the rest were all in favour of them.]

**F.-A. Blanche.** 'L'Analogie.' [A philosophical discussion of analogical concepts from the point of view of logic and from that of the theory of knowledge. The article expounds very clearly the scholastic theory of analogy and shows how our knowledge of the Attributes of God is analogical.]

**J. Toulemonde.** 'Une nouvelle méthode de psychothérapie.' [This is an account of the method of the "new Nancy school," of which M. Coué is the head. The results attained are illustrated and the psychology underlying the method is discussed. The 'subconscious' is freely used in the explanation.]

**Th. Greenwood.** 'Littérature récente sur la théorie de la relativité.' [Critical notices of various books on the theory of relativity.]

REVUE NÉO-SCOLASTIQUE DE PHILOSOPHIE. No. 99. August, 1923.

**E. Gilson.** *Saint Bonaventure et l'évidence de l'existence de Dieu.* [A chapter from the writer's already announced work on the philosophy of S. Bonaventura. The attempts sometimes made to conciliate B. with S. Thomas are hopeless. The "proofs of the existence of God" have a different function in the two philosophies. For B. the argument from the "creatures" as effects to God as their cause are themselves only valid and possible in virtue of the actual presence of God to the mind as the "light of the understanding," which of itself involves in all minds an implicit knowledge of God's existence. St. Thomas's Aristotelian conception of our intellect as primitively a *tabula rasa* makes this kind of "implicit knowledge" impossible on his premisses. Similarly the "ontological proof" in B. is really the assertion of the presence of God to the mind as its "light".]

**H. Pinard.** *Les Méthodes de la Psychologie Religieuse.* [From the writer's work on the study of comparative religion now in course of publication. The present instalment discusses the scope of introspec-



tion, extrospection and experiment as means of obtaining data in the psychology of religion with admirable caution and discrimination.] **N. Balthasar.** "*Cognoscens fit aliud in quantum aliud.*" [This formula, never used by S. Thomas, does not accurately express his view of knowledge.] **C. Sentrone.** *La vraisemblance du probable.* [A simple probable proposition is always a conclusion from premisses; when we say that it "resembles" the truth, what is really meant is that the argument in its favour closely resembles a rigorous proof. A probable proposition is not the same thing as a contingent proposition; a contingent proposition is often certainly true, a merely probable proposition never so.] Reviews, etc.

**RIVISTA DI FILOSOFIA NEO-SCOLASTICA.** Anno xv., Fasc. 4. July-August, 1923. **A. Copelli.** *La critica del giudizio di E. Kant* (II.) [The second part of this study, in which a full summary of the argument of the third *Kritik* is followed by a careful and at times severe, but always moderately expressed, criticism.] **A. Masnovo.** *G. Gentile e la sua Teoria generale dello spirito come atto puro.* [Gentile's pantheistic immanence doctrine is false, but it is the inevitable development of the error made by Descartes when he founded all certainty on the *cogito*.] **U. A. Padovani.** *Intorno all' origine dell' idea di Dio.* [Deals with the recently published first volume of R. Pettazzoni's work, *Dio: formazione e sviluppo del monoteismo nella storia delle religioni*.] Notices of books, etc. Anno. xv. Fasc. 5. September-October, 1923. **J. Maritain.** *La metafisica dei fisici ossia la simultaneità secondo Einstein.* [The author complains that Einstein's account of simultaneity is circular since it contains the notion to be defined. This is made the starting-point for a violent attack on the relativist theory of space and time and for some rhetorical scurrilities addressed to the "moderns" in general and Kant in particular. M. Maritain does not stand alone in thinking that Einstein damages his own physical work by mixing it up with doubtful metaphysics. But it is not clear to me that the particular charge of defining simultaneity by a vicious circle is well founded. Primary simultaneity, simultaneity within the experience of a single subject, is taken by the theory as an indefinable. What is defined is the conditions under which events experienced by different subjects can be, in a secondary sense, simultaneous. Nor are relativists necessarily talking nonsense when they say that there is no one single time-system which can be distinguished as "real" time from the "apparent times" of different observers. M. Maritain's rhetoric would only be to the point if the relativist asserted that there is nothing "absolute" in nature. What he does say is that there are absolute intervals, but they are neither temporal nor spatial; they are intervals in the four-dimensional space-time continuum. This may be an erroneous theory, but it is not proved erroneous by the accumulation of contemptuous epithets nor by the complaint that it is not the opinion of Aristotle.] **A. Bros.** *La Méthode de l'École sociologique et ses postulats.* [A clearly stated criticism of the attempt of Durkheim and his followers to treat sociology independently of psychology, with particular reference to their "group-representation" theory of religion.] **G. Rossi.** *Studi rosminiani* (2). [On Rosmini's classification of the sciences.] Notes and discussions. Book reviews, etc.

**RIVISTA DI FILOSOFIA.** Anno xiv. No. 3. July-October, 1923. **G. Rensi.** *L'autocapivolgimento dell' idealismo.* [Kant's *Bewusstsein überhaupt* is only a name for the formal character of "phenomena," and K. really agrees with Mill's equation "existence = permanent possibility

of sensation." The term "transcendental ego" is a misnomer, but it is out of the misnomer that the whole doctrine of modern Idealism has grown. The author seems hardly alive to the difficulty of making this ascription to Kant of the belief in an absolute phenomenalism compatible with the text of the *Kr.d.r.V.* as a whole. Has he asked himself whether Kant really has a single consistent theory or several mutually incompatible theories in different passages and sometimes even in one and the same passage? **F. Orestano.** *Metapsichica moderna.* [Brief observations on the work of W. Mackenzie.] **A. Banfi.** *La fenomenologia pura di E. Husserl e l'autonomia ideale della sfera teorica.* [Conclusion of the study begun in the previous number.] **C. Mazzantini.** *Osservazioni sulla possibilità di un pluralismo subbiettivistico.* [The attempts of the "absolute" idealists to reduce the finite self to the status of an illusion are necessarily unsuccessful. "The self-limitation of a universal Subject cannot bestow on the *limited* (which is a mere negative) the self-consciousness which transforms it into *another* (finite) subject." The relation between the "universal Subject" and the finite self-consciousness is one of *participation*. Our awareness of ourselves contains two factors, a mystical intuition of our own participation in the eternal and absolute, and an empirical intuition of the dispersion of reality into the plurality of the temporal process. The two "moments," though always distinguishable, tend to approach one another. If our experience covered the whole temporal series, it would be one not of participation but of identity with the absolute, and, on the other side, if it were completely unified, we should no longer have the sense of transitoriness.] *Communiqués and Discussions.* [**R. Calabresi** gives a preliminary account of experiments on the determination of the span of the "specious present" made with the tachistoscope. **G. Nobile** comments on the impossibility of producing educational results of any value from the encouragement of a spirit of vague religiosity. Scepticism may be cured by a genuine belief but not by a "will to believe". **A. Poggi** discusses the right of the State to teach morality and defends it on the ground that the development of free personality is at once the ideal of a true morality and the end for which the State itself exists.] *Reviews, etc.*

## VIII.—NOTE.

TO THE EDITOR OF "MIND".

### PROF. LLOYD MORGAN'S "EMERGENT EVOLUTION".

My attention has been drawn to a misapprehension which may arise out of my review of Prof. Lloyd Morgan's "Emergent Evolution" in the October number of MIND and which I wish to correct. It appears that I have been misled by the author's generous manner of referring to Prof. Alexander's views into attributing to him an undue share in the development of Prof. Lloyd Morgan's philosophy. Actually their views have developed independently; a state of affairs that is gratifying to both philosophers, who find that from different starting points similar results have been reached.

An examination of the last chapter of Prof. Lloyd Morgan's *Animal Behaviour* (1900) and the last chapter and preface of his *Instinct and Experience* (1912) shows that as a matter of historical fact his ideas were developing in the direction of the latest exposition of his philosophy concurrently with Prof. Alexander's. The resemblance between the two philosophies is, of course, confined to the central notion of emergent evolution. On many important points they differ fundamentally.

I must apologise to the two philosophers concerned and to the readers of MIND for making this mistake.

A. D. RITCHIE.

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